Challenger

Product Information Guide

B SERIES SELF PROPELLED WINDROWERS

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FEATURES AND BENEFITS
B SERIES SP WINDROWER

INTRODUCTION

The Challenger SP85B, SP115B, and SP185B replace the original Challenger SP80, SP110 and SP165 windrowers. The new machines bring upgraded Tier II engines (which meet all government emissions standards, along with improved performance), a new hydraulic system, for increased reliability and lower noise levels, and it is now easier to adapt both auger and draper headers to all of the windrower tractors. With the upgrades and improvements, Challenger windrower customers will maintain top productivity.

SP85B and SP115B SP Windrower

The Challenger SP85B replaces the SP80 windrower, and the SP115B replaces the SP110. These new machines share many of the proven features of the machines they replace, along with these improvements:

Chassis

- Heavy 1/4” C-channel side frame rails
- Wheel drive motors fitted directly to planetary drives, eliminating chain drives, but keeping hydraulic components protected
- Planetary drives have increased torque and radial load characteristics

  SP115B - 42:1 final drive ratio compared to 35:1 on the SP110

  SP85B - 34.6:1 final drive ratio compared to 29:1 on the SP80
- Spring applied parking brake, hydraulic pressure release (SP115B), manual (SP85B)
- Heavier lower lift arm anchor, lift arm struts, and stronger lift arms to accommodate auger and draper headers
- Larger drive tires for smoother ride and increased ground clearance (18.4 x 26 Turf and 16.9 x 28 Bar tread compared to 19.5L x 24)
- Radial Bar tire option. 18.4—26 R1
- Formed Caster option with 12.5L—15 tire for better performance in muddy fields.

Hydraulic System

- Sauer-Danfoss hydraulic system for greater reliability and reduced sound levels
- Header pump flow automatically adjusts to auger header or draper header
- Auger and draper headers no longer require installation kits
- Header Reverser standard on both models

Engine and Accessories

- 85 hp Caterpillar 4.41 Liter naturally aspirated engine (SP85B)
- 115 hp Caterpillar 4.41 Liter turbocharged engine (SP115B)
- Tier II engine (Meets new emissions standards)
- Electronic fuel injection (SP115B)

Cab

- Air ride Grammer seat with adjustable shock (SP115B only) and retractable seat belt
- Upgraded instructional seat with padded backrest
- Revised instrument cluster for easier monitoring
- Additional indicator lights on instrument panel
- Redesigned cup holder
- Switch added for reel fore/aft positioning (Draper header option)

SP185B SP Windrower

The Challenger SP185B replaces the SP165 windrower. The SP185B shares many proven features of the machine it replaces, along with these improvements:

Chassis

- Welded box beam side frame rails
- Heavier walking beam
- Wheel drive motors fitted directly to planetary drives, eliminating chain drives, but keeping hydraulic components protected
- Planetary drives have increased torque and radial load characteristics (42:1 final drive ratio compared to 38:1 on the SP165)
- Spring applied parking brake, hydraulic pressure release
- Lift arm receivers, for easier adapting to all heads

Hydraulic System

- Sauer-Danfoss hydraulic system for more reliability and reduced sound levels
- Step up gearbox for tandem pumps - 1.33:1
- Electronic control of header speed

Engine and Accessories

- 185 hp Cummins Tier II engine (Meets new emissions standards)
- Charge air cooler
- Electronic fuel injection

Cab

- Air ride Grammer seat with an adjustable shock and retractable seat belt
- Upgraded instructional seat with padded backrest
- Additional indicator lights on instrument panel
- Redesigned cup holder
- Header speed control changed to knob (from a rocker switch) for easier adjustment
- Switch added for draper shift, draper speed, and reel fore/aft positioning, (Draper header option)

Specification Differences between SP85B, SP115B, and SP185B

	SP85B	SP115B	SP185B
TRACTOR			
Engine	85 hp	115 hp	185 hp
Transmission	1 speed	2 speed	2 speed
Final Drive	Planetary	Planetary	Planetary
Tire - Turf Tread	18.4 x 26	18.4 x 26	23.1 x 26
Tire—Bar Tread	16.9 x 28	16.9 x 28	18.4 x 28
Tire—Radial Bar Tread	18.4R26	18.4R26	NA
Tire - Rear (Forked Caster)	14L x 16.1	14L x 16.1	14L x 16.1
Tire - Rear (Formed Caster)	12.5L x 15	12.5L x 15	NA
Fuel Capacity	60 gal	60 gal	80 gal
Rotary Screen	Opt	Std	Std
Draper Header Adapter	Std	Std	Opt
Weight Carrier Kit	Std	Std	Opt
Cab			
Seat	Air	Air	Air
Instructional Seat	Std	Std	Std
AC and Heat	Std	Std	Std
Electronic Monitor	Opt	Opt	Std
Gauges	Analog	Analog	Analog
Speedometer	Std	Std	Std
Radio	Opt	Opt	Opt
Windshield wiper	Opt	Opt	Opt
Header			
Header Flotation	Hydraulic	Hydraulic	Hydraulic
Hydraulic Header Tilt	Opt	Std	Std
Header Reverse	Std	Std	Std
Swathboard Actuator	Opt	Opt	Opt

MARKET

The SP185B is designed to work with the DKHB disc header, the DHW draper header, and the AHB auger header. The SP185B is for the operator who is looking for higher windrower capacity. It is ideal for the custom operator, large rancher, or operator with a large dairy or cow-calf operation. The SP185B is intended for the operator who has to put up large volumes of hay on a timely basis.

The SP115B tractor is designed to work with the AHB auger header and DHW draper header. The variety of tractor and header combinations meets the productivity needs of custom hay operators, large ranches, large grain and hay growers, and commercial hay operations.

The SP85B tractor is designed to work with the AHB auger header and the DHW draper header. The variety of tractor and header combinations meets the productivity needs of owner-operators that harvest hay, grain, or a combination of both.

MAJOR COMPETITORS

Challenger SP185B
New Holland HW345
(Non Current) HW340
John Deere 4995
Case-IH WDX1902
(Non Current) WDX1701

Challenger SP115B
New Holland HW305S, HW325
(Non Current) HW320
John Deere 4985
MacDon 9350, 9352
Case-IH WDX1202S, WDX1202
(Non Current) WDX1101

Challenger SP85B
New Holland HW305
(Non Current) HW300
MacDon 9250
Case-IH WDX1002S
(Non Current) WDX901

John Deere

New Holland

Case IH

MacDon

CHASSIS

Long Wheelbase

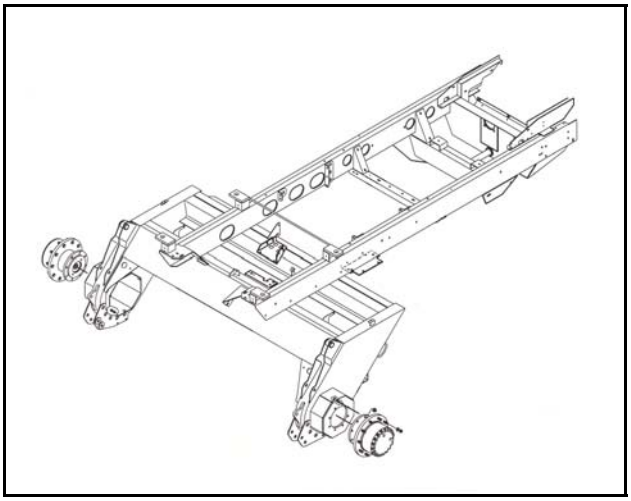
The tractor has a wheelbase of approximately 140” (3.57 m). The long wheelbase helps smooth the ride in rough fields, even at high ground speeds. The smooth ride adds to operator comfort allowing the operator to run longer and get more done.

Wheelbase

Frame

The SP185B frame is heavier than the SP165, as it uses 1/4” welded box beams in the side rails. The SP185B walking beam is also heavier, to better withstand the rigors of high speed windrowing.

The SP85B and SP115B use 1/4” C-channel mainframe rails.



Frame

Rotary Screen

(Standard on SP115B, SP185B-Optional on SP85B)

The rotary screen sits forward of the engine, and high on the tractor, and provides a large volume of clean air for efficient engine cooling. Leaves and chaff drop off the screen by use of a dead air space, or are whisked off by the action of a screen vacuum. The rotary screen provides clean air to the engine, with less chaff getting into the radiator, for better cooling and less time spent cleaning.

Rotary Screen

Engine Compartment Access

A tilting hood allows the operator to easily access the engine compartment. The hood can open to two positions. The hood is lifted to the first latch position for daily service. The hood can then be moved to a wide-open position for periodic servicing, such as changing the air cleaner. The tilting hood allows improved access for quicker and easier maintenance, and less downtime.

Engine Hood

Radiator Compartment Access

The radiator compartment is easily accessible from both sides of the machine. The top-hinged doors only cover the air box, providing more positive sealing in the radiator area. The hydraulic oil cooler and air conditioner condenser slide out the left side for easy cleaning. Easy access speeds cleaning of oil cooler and air conditioner condenser, reducing time spent on routine maintenance.

Radiator Access

Service Platform and Access Ladder

The tractor unit is equipped with a service platform and access ladder located by the left rear wheel. The ladder folds down for use, and is easily folded up for field and road travel. Both the fuel tank and the hydraulic oil reservoir can be accessed from the service platform. The platform and ladder are designed to provide improved access for easier refueling.

Access Ladder

Lift Arms
(SP85B, SP115B)

The lower lift arm anchor, lift arm struts, and lift arms have been strengthened to accommodate both auger and draper headers.

Lift Arm receivers
(SP185B Only)

The lift arm receivers make it easier for disc, sickle, or draper headers to be attached to the SP185B tractor.

Large Drive Tires

The 18.4 x 26 turf and 16.9 x 28 bar tread (SP85B, SP115B) high flotation tires provide a long, wide footprint. The SP185B uses a 23.1 x 26 turf tread (see picture at right) and a 24L x 26 bar tread (tread similar to top picture). The large tires reduce soil compaction, for less crop damage, and provide a smoother, more comfortable ride, for less operator fatigue.

Drive Tire

Rear Tires

The 14L x 16.1 high flotation rear tires allow the tractors to glide over the roughest terrain, under the most adverse conditions. The high flotation tires provide the smoothest ride possible, for less operator fatigue.

Adjustable Walking Beam Axle

The walking beam can be set for tread widths of 84.4 in (2144 mm), 102.2 in (2596 mm), or 120 in (3048 mm). The adjustable rear-walking beam provides excellent tracking if used in row crop applications. The 40.7 in (1034 mm) ground clearance allows a fluffy windrow or the largest draper header swath to easily pass under the rear axle. The high, wide walking beam axle does not obstruct windrow formation, for less crop loss.

Adjustable Axle

Fixed Axle and Formed Casters
(SP85B and SP115B Only)

The fixed axle and formed castors work well in grain swathing applications. The formed castors work well in conditions where mud buildup could cause a problem. 12.5L x 15 tires are used with the fixed axle option.

GROUND DRIVE & HYDRAULIC SYSTEM

Hydraulic System

The new hydraulic system uses renowned Sauer-Danfoss components. The new system will provide more reliability, and reduced sound levels. The hydraulic components are built heavier to handle higher horsepower.

Tandem Pumps

Wheel Motors

The wheel motors are now attached directly to the planetary drive, eliminating the chain drive. The wheel motors are enclosed in the final drive housing, and a cover fits the housing opening, to keep the area around the motor clean, and to reduce sound levels.

Wheel Motor

Planetary Drive

The planetary drives have increased torque and radial load characteristics compared to the earlier models. This gives the machines better pulling power on hills, or crossing ditches. The SP115B planetary has a 42:1 ratio (compared to 38:1). The SP115B now has a 42:1 ratio (compared to 35:1). The SP85B has a 34.6:1 ratio (compared to 29.1).

Final Drive

Step-Up Gearbox
(SP185B Only)

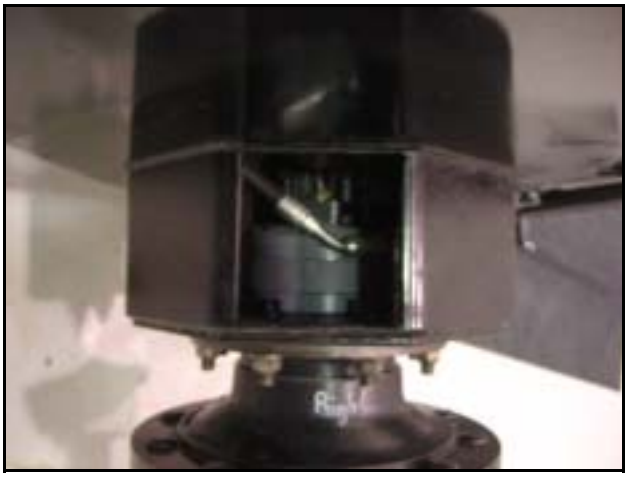
A step-up gearbox (1.33:1) is used on the tandem ground drive pumps. The higher pump speed allows the use of a lower gear ratio planetary, for better torque in low range, and better handling.

The higher ground drive pump speed allows a faster low range (12 mph, 19 km/hr), and a fast high range (16 mph, 25 km/hr).

Step Up Gearbox

Hydraulic Parking Brake
(SP115B, SP185B)

The parking brake is now applied more positively. The brake is spring applied, and hydraulically disengaged. The parking brakes are protected from debris and mud, and is accessible by removing the wheel motor cover.



Hydraulic Brake (Part of housing removed for clarity)

Disc Parking Brake
(SP85B Only)

The SP85B uses a disk parking brake. The brakes are set inside the final drive housing to protect them from debris and mud, but are easily accessible by removing the wheel motor cover.

Header Drive

The header drive speed is set depending on the header installed. When the electrical wire from the header to the tractor is connected, the tractor will know what header is attached, and the hydraulic flow to the header is automatically adjusted. For example, a draper header runs slower therefore requires less hydraulic flow than a disc header.

Header Drive Pump

Header Flotation

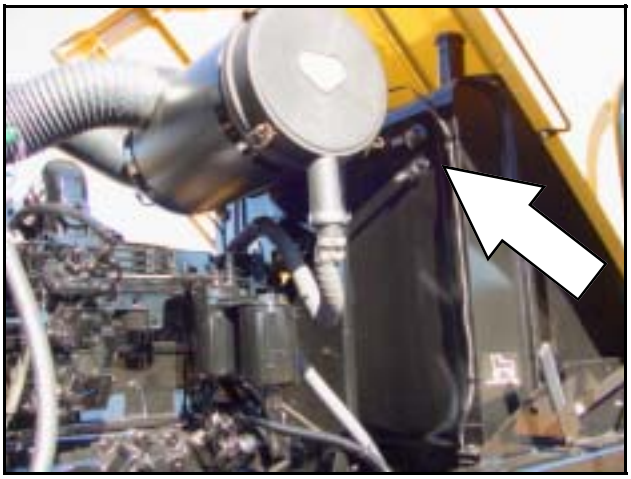
The header flotation circuit allows the header to follow the field contours. The flotation circuit consists of two flotation cylinders, an accumulator, and the header lift and flotation valve. The operator controls flotation pressure by activating the flotation pressure switch on the console, and monitors the flotation pressure on the console-mounted gauge. The hydraulic flotation adjustment is much quicker and easier than adjusting flotation springs. The flotation can easily be set and monitored by the operator, for less time spent on set-up and longer header life.

Flotation Cylinder

Hydraulic Reservoir

The hydraulic system has a 23 U.S. gallon (87 L) oil capacity (SP85B, SP115B). The SP185B has a 26 gallon (98 L) capacity. Two filters (charge and return) are used to eliminate contamination. An oil cooler keeps the oil at optimum operating temperature.

The hydraulic reservoir has two handy sight glasses to determine oil level. The sight glasses can be quickly glanced at during routine servicing. The large oil capacity and large oil cooler keeps the system running at peak efficiency, prolonging system life.



Sight Glass

Worm Gear Steering Drive

The worm gear steering gives the operator precise steering control. The movement of the steering wheel closely resembles actual tractor movement. The steering wheel movement in the field is reduced, and steering action on the road is more predictable. The worm gears are enclosed, containing lubrication and reducing wear. The operator can keep better control of the machine at high field and road speeds with less effort, reducing fatigue.

Steering Worm Gear

ELECTRICAL SYSTEM

Alternator

The SP115B and SP85B tractors are equipped with a 110 amp alternator. The SP185B has a 95 amp alternator. The alternator is large enough to handle nighttime cutting, which requires operating lights, as well as heater or air conditioner, for operator comfort. The alternator is sized for large electrical loads, for more reliable operation.

Alternator SP85B

Batteries

The windrower tractor is equipped with two 12-volt batteries. One battery is located on each side of the engine, for easy access. The batteries provide sufficient power to start the machine in adverse conditions, for less downtime.

Battery

Fuses and Circuit Breakers

The fuses and circuit breakers for the electrical system are located beneath the control panel in the cab. An instructional decal placed near the fuses shows the fuse sizes. The fuse location is ideal for protection from elements and for better serviceability.

External Battery Booster Posts

Challenger windrowers are equipped with external battery booster posts. These posts are located on the left side of the engine main frame. The posts eliminate the need to raise the hood when jumping the windrower, or provide a handy place to attach cables to jump another vehicle. The booster posts are easily accessible for convenient use of jumper cables.

ENGINE AND ACCESSORIES

Engines

The new Challenger windrower engines meet all Tier II emissions standards.

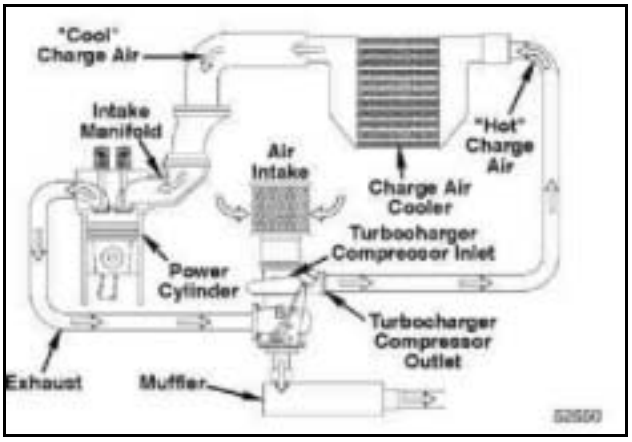
- The SP185B engine is a 185 hp, 5.9 liter, turbocharged and intercooled Cummins QSB 185A engine.
- The SP115B engine is a 115 hp, 4.41 liter, Direct Injection Turbocharged Caterpillar 3054E engine.
- The SP85B engine is a 85 hp, 4.41 liter, Direct Injection Naturally Aspirated Caterpillar 3054C engine.

The SP115B and SP185B engines use an electronic fuel injection system, which is more precise and responsive. The engine torque is better than on previous mechanical versions.

Engine

Intercooler
(SP185B Only)

The engine uses an air-to-air intercooler. The turbocharged compressed air is cooled as it flows through the intercooler. Cooling the charged air allows it to be compressed more than hot air. More compressed air can then be pushed into the intake manifold, and from there into the cylinders. The cooled, compressed air mixes more thoroughly with the injected fuel, so the fuel is burned more completely, giving more power with less emissions.



Intercooler

Fuel Tank

The SP85B and SP115B tractors are equipped with a 60-U.S. gallon fuel tank (227 L). The SP185B has an 80 gallon (303 L) capacity. The large tanks provide enough fuel for 10 hours of field operation. The fuel tank is easily accessed by use of the service platform and folding ladder. The large fuel tank allows the machine to run longer without refueling, increasing productivity.

Fuel Tank

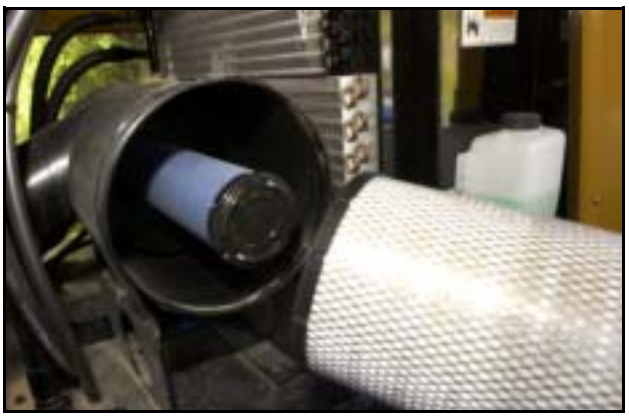
Radiator

The cooling system capacity on the SP85B and SP115B is 22 quarts (20.8 L). The SP185B capacity is 36 quarts (34.1 L). Cleaning and filling the radiator is made easier by the use of large, top hinged shields, and slide out oil cooler and air conditioner condenser. A large, accessible radiator keeps the engine running at peak efficiency, for long life.

Radiator

Aspirated Air Cleaner

The exhaust air flow creates a vacuum on the air cleaner canister, drawing off the heavier dirt particles and expelling them. The aspirated air cleaner extends service intervals so less time needs to be spent cleaning the air filter, reducing maintenance time.



Air Filter

CAB

Cab Design

The cab is designed for maximum operator comfort. Special attention was paid in placing all controls and monitoring systems in the most convenient position for the operator. The cab allows the operator to work at peak productivity for much longer, increasing total output. All headers feature a header walkway, and the cab features grab rails to hold on to, making it easy to clean the cab glass.

Cab

Large Curved Windshield

The cab features a large curved windshield without obtrusive corner posts for improved operator visibility. There is 73 square feet of tinted glass, which allows the operator to easily see both ends of the header. The large curved windshield allows the entire header to be seen, reducing operator stress and strain.

Curved Windshield

Curved windshield inside

Air Suspension Seat

The operator's seat is air suspended to absorb the shocks of high speed mowing on rough fields. The SP115B and SP185B seat have a three position adjustable vertical shock absorber. The seat can be held stationary or set for isolator. The isolator allows the seat to move fore and aft with the operator to absorb shocks and reduce operator fatigue when operating on rough terrain. The left armrest tilts back for easy entrance/ exit. The backrest and lumbar support can be adjusted separately. The air ride seat smoothes rough terrain, keeping the operator from becoming fatigued, for increased productivity.

Grammer Seat

Grammer Seat Back Up

Instructional Seat with Seat Belt

A fold up instructional seat with seat belt is standard on all three tractors The seat, located to the left of the operator seat, gives an instructor a comfortable place to sit when teaching a new driver how to operate the windrower, or for a service technician to help diagnose a problem.

Instructor Seat Down

Instructors Seat Up

Steering Column

The two spoke steering wheel design allows for improved visibility of the header. Once the operator is seated, the steering post can be pivoted by depressing a foot pedal at the base of the steering post. The steering wheel can then tilt to one of nine positions, for optimal operator comfort. The steering wheel tilt and pivot matches the operator need for maximum comfort and visibility.

Steering Column

Console Gauges

The console gauge cluster includes water temperature (1), voltmeter (2), oil pressure (3), fuel gauge (4), speedometer (5), and hourmeter (6). The console also monitors hydraulic oil level (7), coolant level (8), hydraulic oil pressure (9), and air cleaner restriction (10) and has a turn signal/flasher indicator lamp (11). A performance monitor is standard equipment on the SP185B and offered as an optional kit for the SP85B and the SP115B. See performance monitor on the next page or in the Kits Section.

Analog Gauges

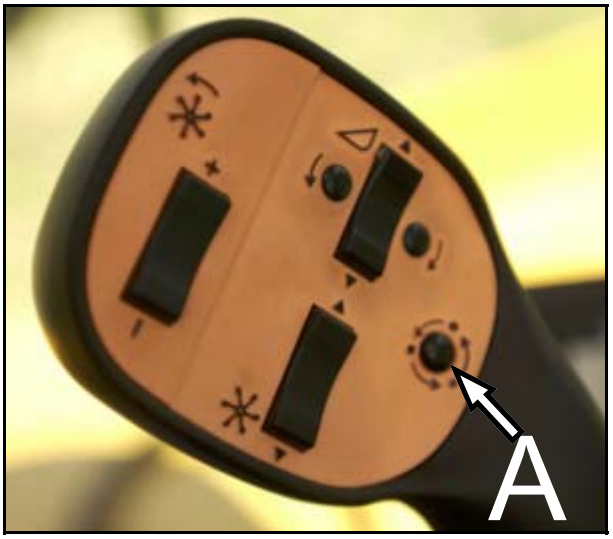
Control Console

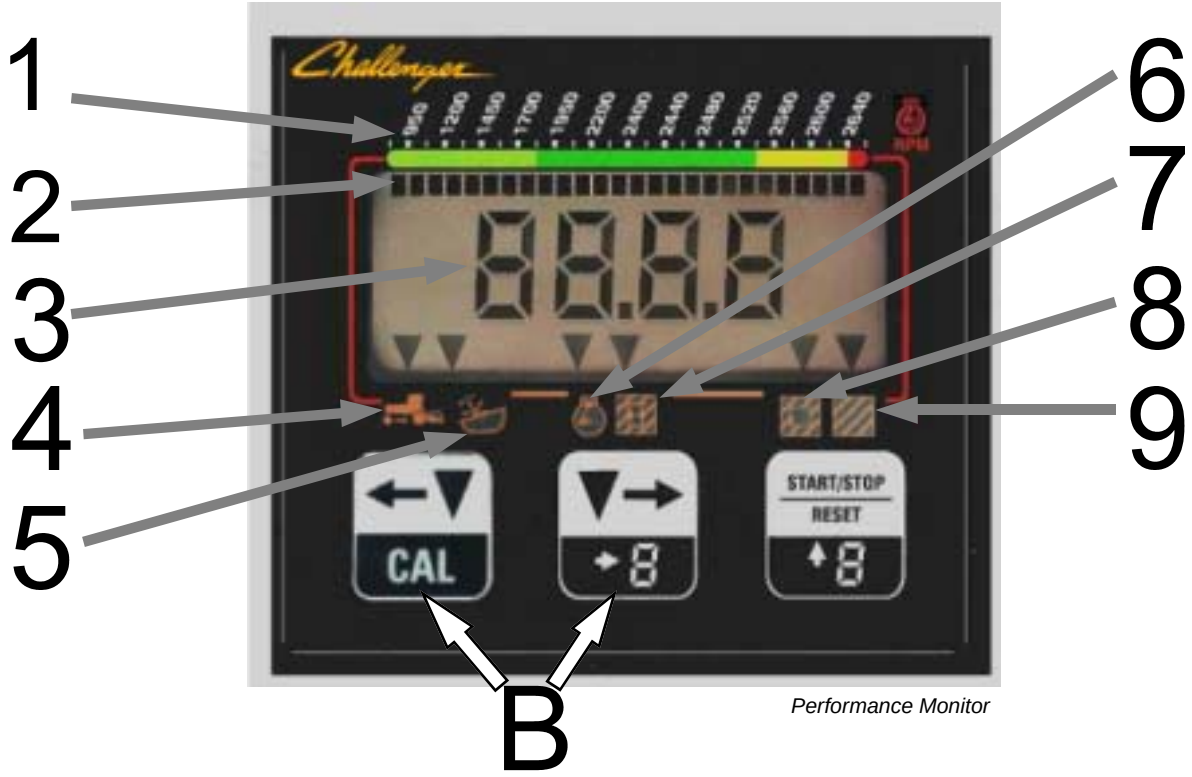
The control console is logically placed to the right of the operator. The entire console moves with the seat, and is adjustable both vertically and horizontally relative to the seat to maximize operator comfort and to reduce operator fatigue for greater productivity. The tractor and header controls, which are used periodically, are activated from the console, and the controls that are used continually, are located on the header and travel control lever. The cup holder is also attached to the console, helping to reduce spills.

Control Console

Monitor
(Standard on SP185B, Optional on SP115B and SP85B)

The electronic monitor checks 6 different functions on the windrower. The monitor graphically shows engine RPM with the bar graph along the top of the LCD. The digital display shows one of 6 different functions. From left to right the functions are, ground speed [4], header speed [5], engine RPM's [6], cutting rate (acres/hour) [7], area cut (re-settable) [8], and total area cut [9]. Pressing the selector switch on the control lever (A), or either of the selector keys on the monitor (B) will scroll the display. The electronic monitor keeps track of machine function, warning of any impending problem, giving the operator peace of mind.





Performance Monitor

A. Selector Button on Hydro Handle
B. Selector Keys on Monitor
1. Engine RPM scale
2. Engine RPM Bar Graph
3. Digital Display
4. Ground Speed
5. Header Speed
6. Engine RPM Digital Display
7. Cutting Rate
8. Cut Area (Re-settable)
9. Total Area Cut

Engine Indicator Lights
(SP185B, SP115B)

A new row of indicator lights has been added under the monitor on the SP185B tractor. The lights are Engine Stop (stop engine immediately), Engine Warning (service engine soon), Wait to Start (used with engine intake air heater), Water in Fuel, and Engine Service (low fluid level). Two warning indicator lights will be on the SP115B; Engine Stop (stop engine immediately), Engine Warning (service engine soon), The SP85B does not have these indicator lights.

SP 185 BIndicator Lights

SP115B Indicator Lights

Header Flotation Adjustment

The header flotation can be easily monitored by using the analog gauge (1) on the control console. The flotation can be adjusted by using the rocker switch (2) next to the gauge. Pressing the top of the switch increases the header flotation (making the header lighter). Pressing the bottom of the switch lowers the header flotation (making the header heavier). Header flotation adjustments can be made easily from the cab, helping reduce header skid shoe wear.

Flotation Gauge

Header Engage Switch

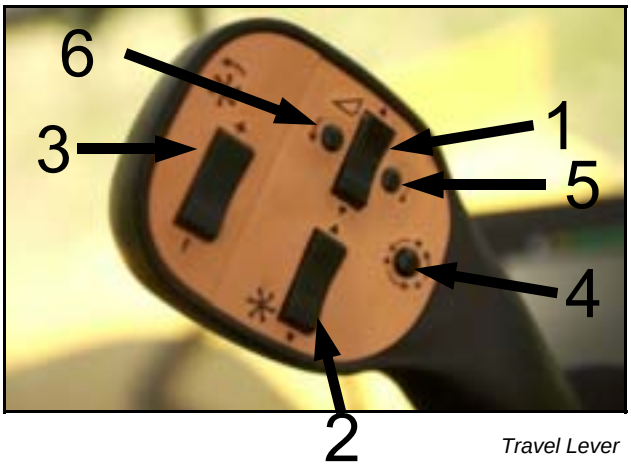
The header is easily engaged with a toggle switch. The same switch is used to reverse the header. The switch can not be accidentally engaged, as it must be lifted up before it can be moved forward. The switch is held back to reverse the header, and springs back to neutral when released. The header reverses the entire header at about one-half the forward speed, making it very effective when unplugging the header.

Header Engage

Ground Speed and Header Control Lever

The Ground Speed and Header Control Lever utilizes the same ergonomically designed handle as the Challenger combines. The lever is designed to support the operator's hand in the most comfortable position. The operation of the lever is very smooth and easy, as the operation is servo-assisted.

In addition to direction and speed control, the lever contains three switches, which control 1) Header lift, 2) Reel Height or Swathboard actuator (depending on how the machine is equipped), 3) Reel speed and lift on draper heads, (or swathboard actuator and DWA deflector), and three buttons 4) monitor select function, 5) Header angle decrease and 6) Header angle increase. The control lever operates the most often-used functions of the windrower, which makes the operation more convenient and less fatiguing.



Travel Lever

Console Switches

A full array of switches are included on the tractors. Draper header function switches such as draper shift, draper speed, and reel fore-aft (Optional on the header) are in place. On the SP185B, the header disc speed is controlled by a knob, for easier adjustment.

Console Switches

Parking Brake Lever

The parking brake lever is located on the right side of the operator's control console. Before the engine can be started, the parking brake must be applied, the travel control lever must be in neutral, and the steering wheel must be centered and locked. By not allowing the engine to start unless the park brake is set, any unwanted movement of the machine is avoided.

Park Brake Lever

Air Conditioner and Heater

The cab is fitted with a high capacity air conditioner to keep the operator environment cool on the hottest days. A heater is also standard to make the machine versatile for all seasons. The cab is equipped with four vent outlets, and two re-circulation vents. The vents can be directed toward the windshield to defog, or towards the operator for maximum comfort. The standard fitting of the air conditioner and heater allows the operator to be more productive in a comfortable working environment.

AC-Heater Controls

Operating Lights

The tractor is equipped with eight, rectangular halogen lights. Five are located at the front of the cab, two at the rear of the cab, and one at the rear of the tractor. The lights are positioned to provide the operator with outstanding field lighting during night operation. The well-placed lighting illuminates the entire working area, helping the operator maintain full efficiency during nighttime running.

Front Lights

Rear Lights

Hinged Right Side Window

The right side cab window is hinged for ventilation and service access. Access to the right side of the control console is enhanced, for easier maintenance.

Right Window

Rear View Mirrors

The cab is equipped with a deluxe mirror located on each side of the cab, plus a mirror inside the cab. They provide the operator with an excellent view of cut and uncut crop. The mirrors also are invaluable when roading the machine to monitor traffic. The large mirrors allow the operator to monitor the rear, both in the field and on the road, improving productivity and operator security.

Mirrors

Cab Air Filter

The air filter is located externally. Changing or cleaning the filter is easily done outside the cab. This prevents contents of filter from falling into the cab. Dust is purged from the filter every time the cab door is closed, extending the time between servicing intervals. The external air filter location provides easy cleaning and long change intervals, so less time is spent maintaining the air filter system.

Cab Filter

Electrical Power Outlets

Two 12 volt power outlets are available on the right side of the control console. The outlets are un-switched to the battery with independent 20-amp fuse for each. Twenty amps are the maximum permissible load, but the fuse size can be reduced to protect smaller loads such as communications, radio, or telephones. The two outlets make it easier to attach various electrical devices, making the machine more versatile.

Power Outlets

Control Console Position Adjustment

The fore-aft location of the control console can be adjusted relative to the operator's seat by using two adjustment knobs located under the console. The console can also be moved to one of four vertical positions relative to the operator's seat, by utilizing a retaining knob at the rear of the console. The console can be adjusted relative to the operator, for greater operator comfort.

Console Adjust

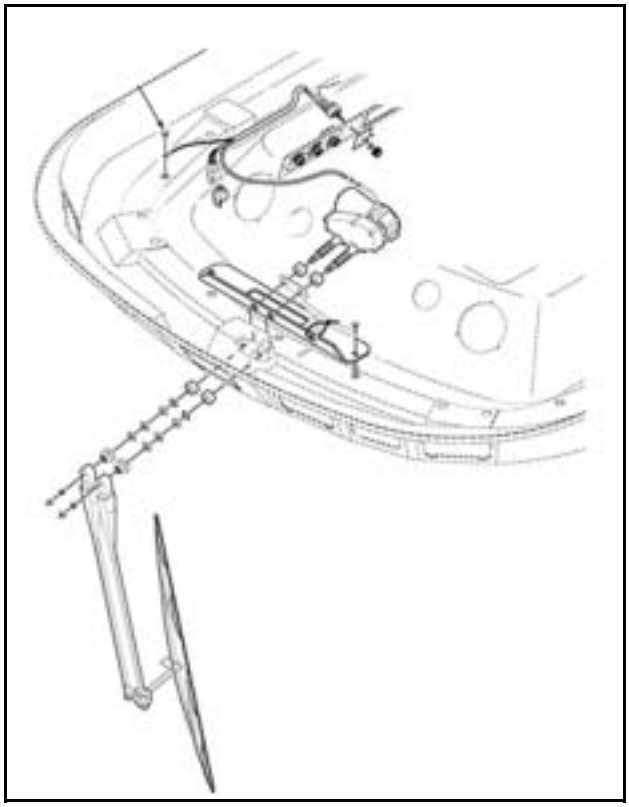
OPTIONAL KITS (FIELD INSTALLED)

Windshield Wiper Kit

The windshield wiper kit includes the wiper blade, arm, linkage, electric motor, switch, and all hardware needed to mount on the cab. The wiper kit improves visibility when raining, giving the operator greater control during roading.

Wholegoods Kit – BK61083

Estimated Installation Time – 2.0 Hr.



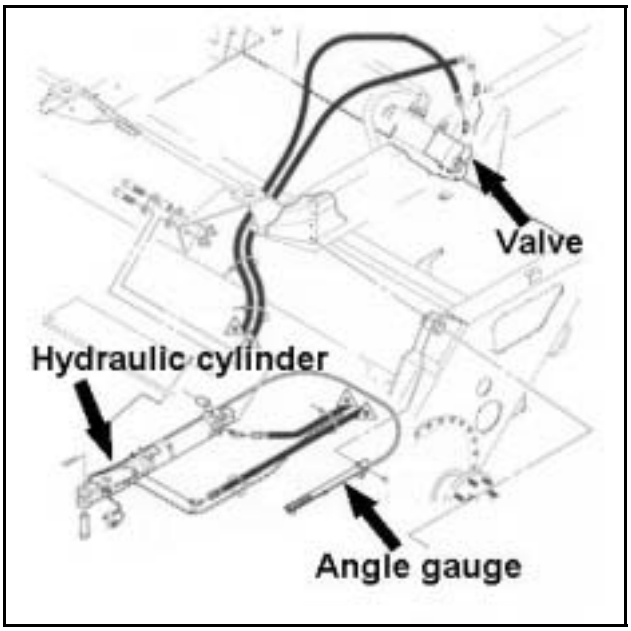
Windshield Wiper

Hydraulic Guard Angle Kit
(SP85B only)

The hydraulic guard angle kit allows the operator to change the header tilt from the tractor cab. A gauge is supplied to allow the operator to monitor the amount of header tilt.

Wholegoods Kit – BK60946

Estimated Installation Time – 1.0 Hr.



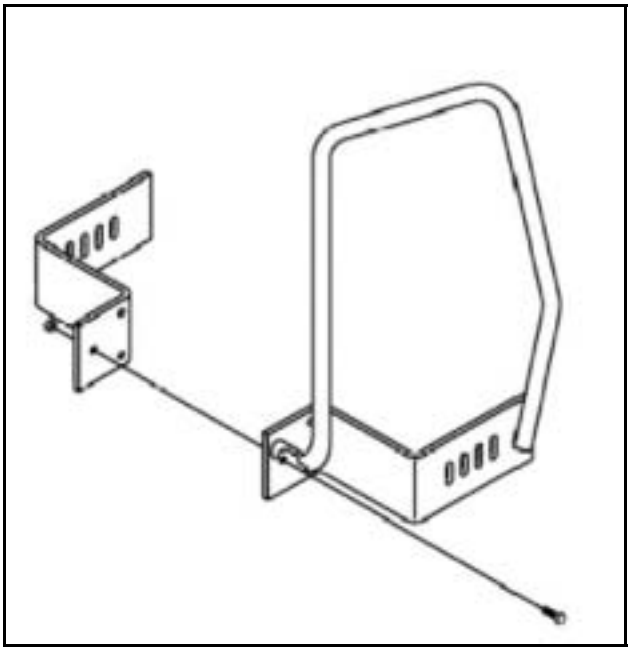
Hyd Guard Angle

Weight Carrier Kit
(SP185B)

The kit consists of a weight carrier bracket on each side of the tractor. The brackets accommodate common tractor suitcase weights. The weight kit is standard on the SP85B and the SP115B tractors. Recommended with DHW Header.

Wholegoods kit – BK60945

Estimated Installation Time – 1.0 Hr.



Weight Carrier

Hitch Kit

The hitch kit is used with a draper header to pull a swath roller. The hitch is not intended to be used to pull anything other than a swath roller.

Wholegoods Kit – BK61138

Estimated Installation Time – 0.5 Hr.

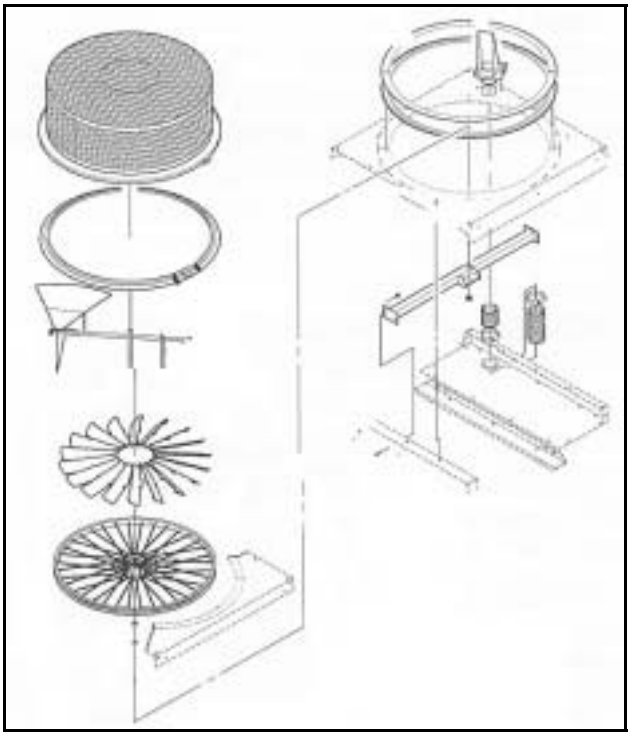
Hitch

Rotary Screen Kit
(SP85B Only)

The rotary screen provides a large volume of clean air for efficient engine cooling. Leaves and chaff drop off the screen by use of a dead air space, or are whisked off by the action of a screen vacuum.
The rotary screen provides clean air to the engine, with less chaff getting into the radiator, for less time spent cleaning.

Wholegoods Kit – BK61025

Estimated Installation Time – 3.0 Hr.



Rotary Screen

Quick Couplers

Quick couplers allow the header to be attached or detached quickly. When multiple headers are used, the quick couplers allow the headers to be quickly swapped. Each kit has one set of couplers.

SP185B - Two tractor kits
SP115B and SP85B - One tractor kit
DKHB Header - Two header kits
AHB and DH - One header kit

Wholegoods Kit - Tractor - BK61099
Header - BK61098

Estimated Installation Time - 1.0 Hr.

Quick Couplers

Quick Couplers 2

Performance Monitor
(SP85B, SP115B)

An optional performance monitor is available. The monitor shows engine rpm all the time. The display can scroll by using the switch on the hydro handle. (Standard Equipment on SP185B)

1) Ground Speed
2) Header Speed
3) Engine rpm
4) Acres/Hour
5) Field Acres
6) Total Acres

Wholegoods Kit – BK61138

Estimated Installation Time – 2.0 Hr.

Performance Monitor

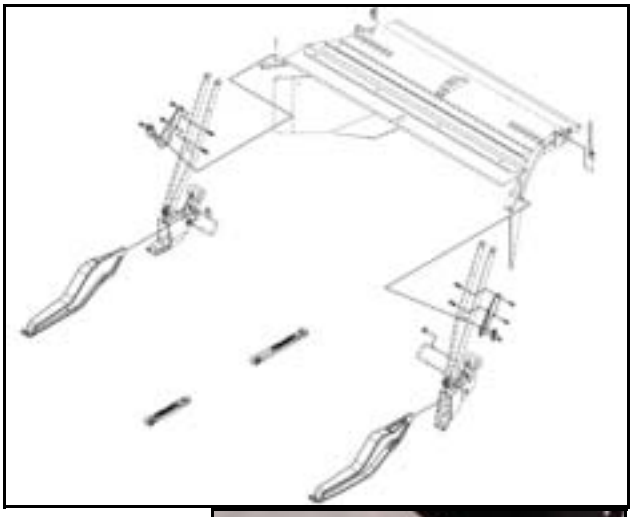
Performance Monitor Installed

Draper or Auger Header Adapter Kit
(SP185B Only)

The draper or auger header adapter kit contains all the parts needed to attach a DH draper header or a AHB auger header to an SP185B tractor.

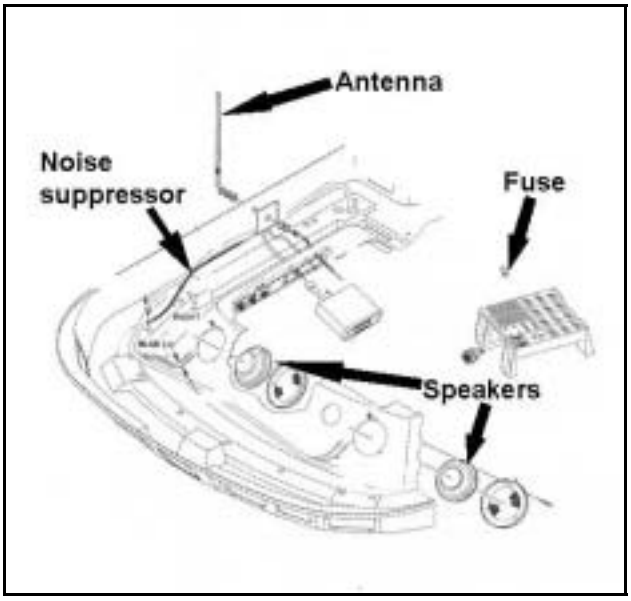
Wholegoods Kit – BK61109

Estimated Installation Time – 1.0 Hr.



Stereo Radio

An AM-FM stereo-cassette player radio or AM-FM stereo-cassette with weatherband is available through wholegoods. The radio allows the operator to keep up-to-date on the news, weather, and market reports. The speakers are placed to provide the operator with excellent sound quality. The B series tractors come standard with the speakers, noise suppressor, antenna, and fuse. The wiring is in place to plug the radio in. The radio provides a more comfortable environment, for better operator productivity. Additional radio combinations can be obtained through AGCO Parts. If the radio is ordered with the tractor, it is installed prior to shipping.



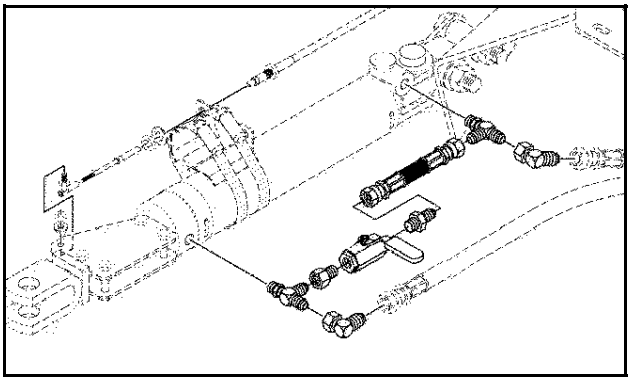
Radio Kit

Wholegoods Kit –
AM/FM Cassette - BK61101
AM/FM Cassette w/Weatherband - BK61102

Estimated Installation Time – 1.0 Hr.

Easy Attach Header Angle Kit

The easy attach header angle kit allows the top link cylinder to be easily attached. By rotating a handle on the ball valve, the cylinder rod can be easily adjusted, for easy attachment to the header.



Easy Attach Kit

Wholegoods Kit - BK61100

Estimated Installation Time - 1.0 Hr.

Double Windrower Attachment
(For SP185B Only)

The double windrower attachment (DWA) is designed to lay two windrows together, or side-by-side. The first pass through the field deposits a windrow on the right side of the tractor. A right hand turn and a second pass through the field lays the two windrows together, or side-by-side. The kit provides everything needed to attach the DWA to the SP185B tractor.

Wholegoods Kit - BK60996

Estimated Installation Time - 6.0 Hr.

DWA Glamour

DWA Draper Belt

The draper belt conveys the cut crop to the right side of the tractor. The draper belt is an endless belt, eliminating problems associated with the belt splice. The draper belt uses reinforced slats to convey the crop. The draper speed is variable, controlled by a valve on the DWA frame.

DWA Belt

DWA Deflector Shield

The deflector shield is controlled hydraulically by the operator. The shield is placed in the down position for the first pass, so the windrow is not thrown into the uncut crop. On the second pass, the deflector is raised, so the second windrow will be thrown onto the first windrow, or “doubled”. The deflector can be adjusted to vary windrow placement. The deflector height adjustment can be maintained by placing stop collars (provided) on the deflector lift cylinder.

DWA Deflector

DWA Carriage

The entire DWA carriage can be raised and lowered with the header. A three position switch in the cab controls the attachment. With the switch in the right position, the draper is on, and the DWA will raise and lower with the header. With the switch in the middle position, the draper is shut off, and the DWA will raise and lower with the header. This allows the operator to cut a short distance without the canvas running, allowing the windrow to be better positioned at the ends of the field. With the switch in the left position, the draper is shut off, and the DWA will stay in the up position. This allows the operator to lay a center swath without removing the DWA from the tractor.

DWA Carriage

Installation and Removal

Along with the draper carriage, the kit includes a hydraulic pump and drive, and all hydraulic and electrical parts needed for installation. Once the DWA is installed on the tractor, it can be quickly dismounted and reinstalled. A jack is provided for storage, and all hydraulic hoses are quick disconnect. It will take about 15 minutes to dismount, and about 30 minutes to reinstall.

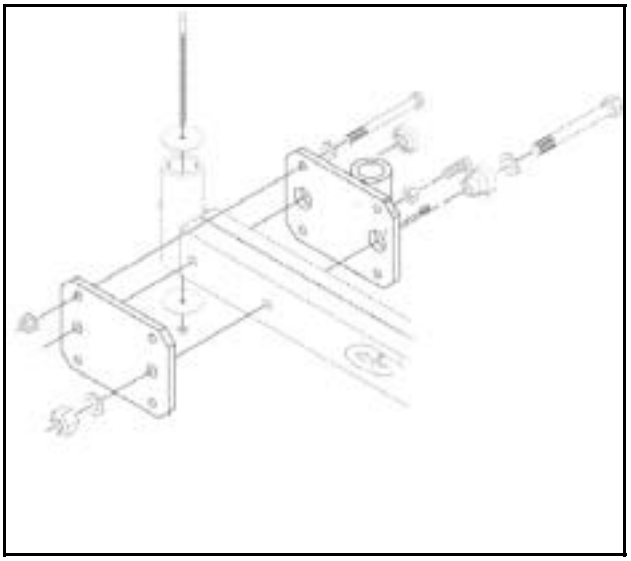
DWA Rear

Offset Tailwheel Kit
(For use with DWA)

The offset tailwheel kit is used with the double windrower attachment (DWA), and repositions the right tailwheel behind the axle (instead of at the end of the axle). Repositioning the tailwheel allows a wider double windrow to be made without being run over by the tailwheel.

Wholegoods Kit - BK61112

Estimated Installation Time - 1.0 Hr.



Tailwheel Offset

DKHB Header

INTRODUCTION

The DKHB header is the updated disc header that will be used on the SP185B Windrower Tractor. The DKHB is available in a 12' and a 15' 3" cut version. The new header shares many of the proven features of the DKH header, along with these improvements:

- Header motors are included with the header. This makes it easier to adapt the auger and draper headers to the SP185B tractor.
- Redesigned crop conveying cages for smoother crop flow.
- Larger hay conditioner bearings (90 mm, re-lubeable)
- Header speed sensor, electronically controls pump speed for consistent header speed regardless of engine speed.
- Hay conditioner slip indicator (detects belt slip)
- Adjustable skid shoes standard on each end of the header
- Gauge wheels are an optional kit

CUTTERBAR

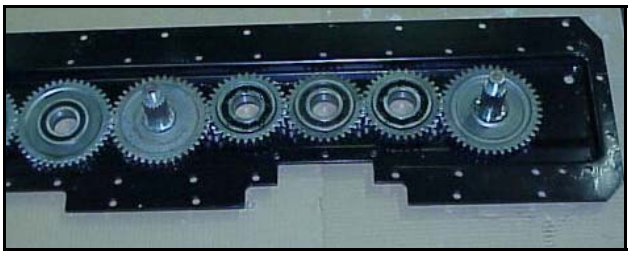
Gear to Gear Cutterbar

Both the 12’ and 15’ 3” cutterbar are a spur gear design. Each gear assembly and adjacent idler gear can be individually removed and serviced, without disassembly of the cutterbar, reducing downtime and increasing productivity. The spur gear design allows the cutterbar profile to be thinner, allowing closer cutting with less scalloping.

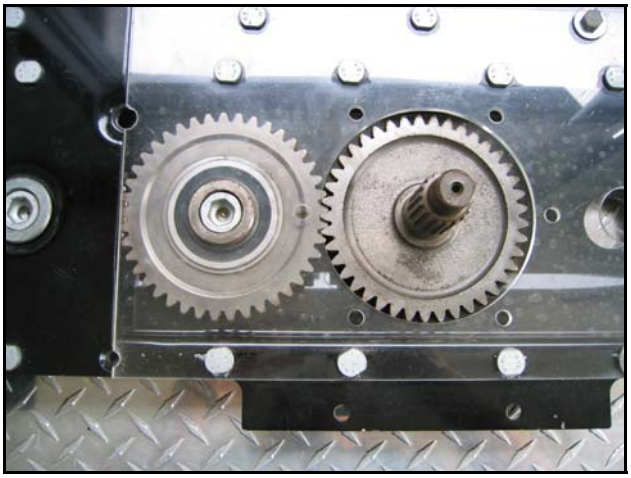
Cutterbed

Cutterbar Gears

The cutterbar gears have heavy duty, wide profile teeth. The wide profile increases the gear-to-gear tooth contact area, improving the load carrying capacity of the gear. The gear teeth are “shaved”, which is a higher-grade finish than on standard gears. The shaving process reduces the possibility of cutterbar contamination, and allows the teeth to mesh better, providing quieter and smoother running gears. The cutterbar gears have shaved, wide profile teeth, giving higher load carrying capacity and smoother operation, for long life and trouble-free operation.



15’ Bed Gears

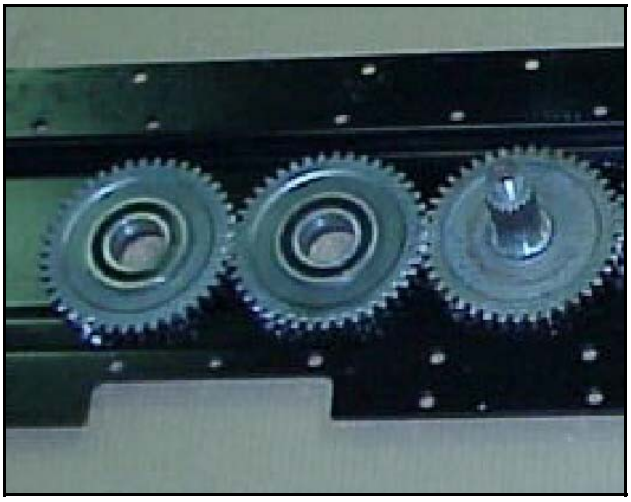


Bed Gears

Sealed Bed Bearings

The bed bearings are sealed, which gives several advantages:

1) Bearing life is longer, as any contamination in the bed will not cause bearing failure. Longer bearing life makes for a long life cutterbed, for less machine downtime.
2) The primary lubrication for the bearings is self contained in the sealed bearing. The oil for the bed lubrication is mainly to coat the gear teeth, so the quantity of lubrication required for the bed can be reduced. This saves time and money when servicing the machine.



Sealed Brgs

Cage Crop Conveyors

The crop is conveyed to the 110” conditioner roll opening by a series of rotating cages. The second cage is set back, and the third cage is half height. Crop flow is smoothed, and it is especially evident in heavier crops. The cages smoothly deliver the crop to the helper and conditioner rolls. The cage crop conveyors smoothly move crop to the conditioner opening, maintaining high output in all crop conditions.

Cage crop conveyors

Turbulence Reduction Roll

The turbulence reduction roll moves the crop from the cutterbed to the conditioner rolls. The turbulence reduction roll allows the conditioner rolls to be moved back 8”, so the amount of air turbulence directed forward is reduced, which improves cutoff in light crop conditions. The turbulence reduction roll helps improves cutoff in light crop conditions, and maintains smooth crop flow in heavy crop, improving machine versatility.

Turbulence Red. Roll

HAY CONDITIONER

Fully Engaged Conditioner Rolls

The crop is crimped by the action of the conditioner rolls cracking the plant stem along it's entire length. Crop leaves are retained, for higher hay protein content.

Conditioner rolls are available from the factory steel on steel only, as it has been found that rubber roll wear is unacceptably high in a high capacity disc mower conditioner. The fully engaged conditioner rolls conditions the plant stems with reduced leaf loss, and steel-on-steel design wears less, for superior quality hay and long machine life.

Steel on steel Rolls

Conditioner Drive

The spur gearbox directly drives the conditioner rolls through u-joint drive shafts. The gearbox is continually lubed, so maintenance is reduced. The u-joint drives to the conditioner rolls are very durable. They are designed to withstand the rolls continual opening and closing. The continually lubed gearbox and u-joint drive shafts provide quiet and reliable drive, for lower maintenance expense and less downtime.

Conditioner Drive

110-inch Conditioner Rolls

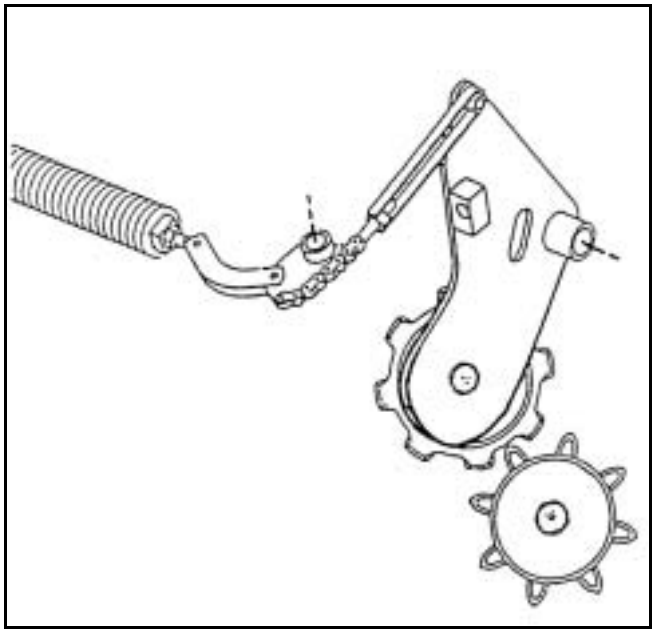
The 110-inch wide rolls allow the crop mat to be spread out, so the rolls aren't opened as wide in heavy crop. This gives the rolls room to open farther, even in the heaviest crops. Because the crop mat is thinner, each individual crop stem can be conditioned more uniformly. The wide rolls condition the crop more uniformly and thoroughly, increasing the total value of the crop.

Conditioner Rolls

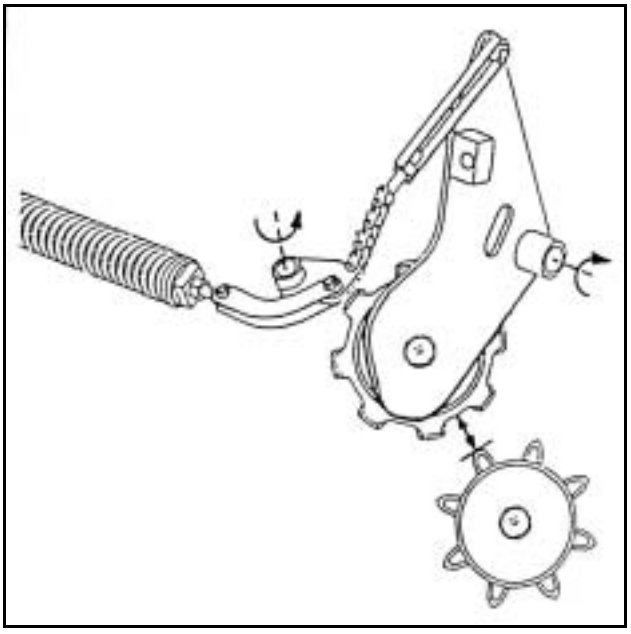
Conditioner Roll Pressure Release

The conditioner rolls utilize an over center cam (1) at each end that allows the rolls to open easier when an obstacle or clump of hay is encountered in the field. The over center cam will automatically reset after the obstruction has passed through the conditioner rolls. The roll pressure release allows the potential plug to expel without stopping, enhancing productivity.

Conditioner Tension



Cam 1



Cam 2

HEADER MAINFRAME

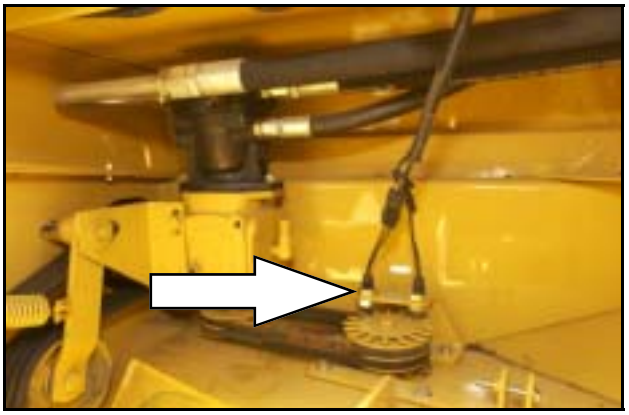
Cutterbar Frame

The cutterbar is set into a “cradle” which helps keep the cuttebar from twisting. (In the picture to the right, the yellow framework surrounds the black cutterbar.) Flexing causes wear on gear teeth, which can shorten life. Keeping the cutterbar rigid saves downtime by prolonging bed life.

Cutterbar Frame

Speed Sensor

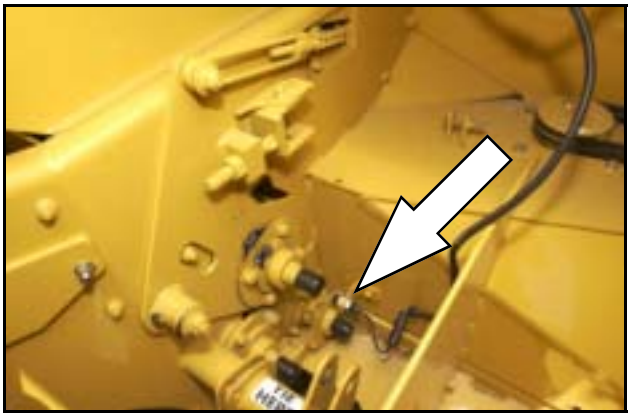
Like the DKH header, once the header speed has been selected, it will be maintained whether the engine speed raises or lowers. This load sensing is now electronically controlled, instead of hydraulically controlled, for more consistency. The parts previously needed for the hydraulic compensator (actuator, sprocket, chain, hose) are not needed.



Speed Sensor

Roll Slip Detector

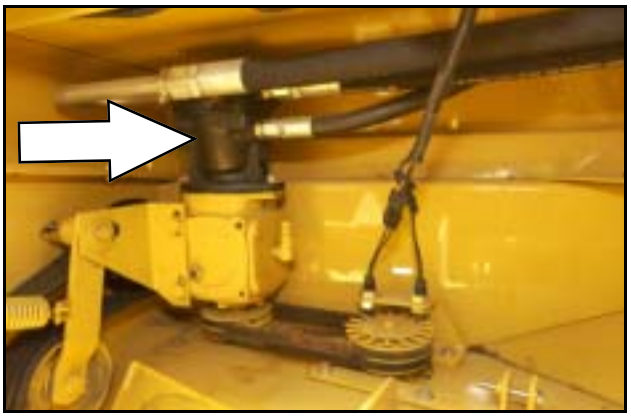
A sensor is now in place to detect slippage of the conditioner banded belt. The roll slip detector helps to extend the life of the conditioner roll drive belt, for reduced maintenance cost.



Slip Detector

Header Drive

The cutterbar is driven by a hydraulic motor on each end of the header. This equalizes the torque load across the entire cutterbar, for longer life. The header speed can be adjusted separately from the engine speed, from 0 to 2600 rpm. The engine speed can be reduced while still maintaining full cutterbar speed, maximizing fuel efficiency. The dual header drive spreads the torque load and the header speed is adjustable, for a more efficient machine in both design and function.

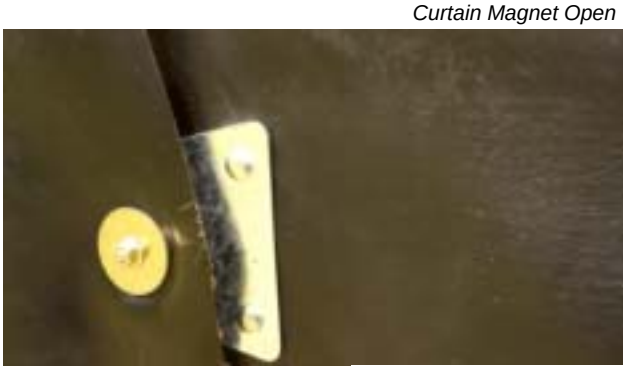


Header Drive

Cutterbar Shield Curtains

The cutterbar shield curtains are held together with magnetic catches. The catches hold the curtains together, to keep material from flying from under the cutterbar. The magnets make latching easy and secure. The cutterbar shield curtains held together with magnetic catches form a ring around the cutterbar for security, but are easily unlatched for easy cutterbar service.

Curtain Magnet Open



Curtain Magnet Latched

Forming Shields

The forming shields can be set to operator's preference. The adjustable rear deflector shield slows crop momentum to allow it to fall gently into a tall, fluffy, quick drying windrow. The forming shields can be set to build a windrow any way the operator desires, so crop can be harvested with minimum delay.

Windrow Forming Shields

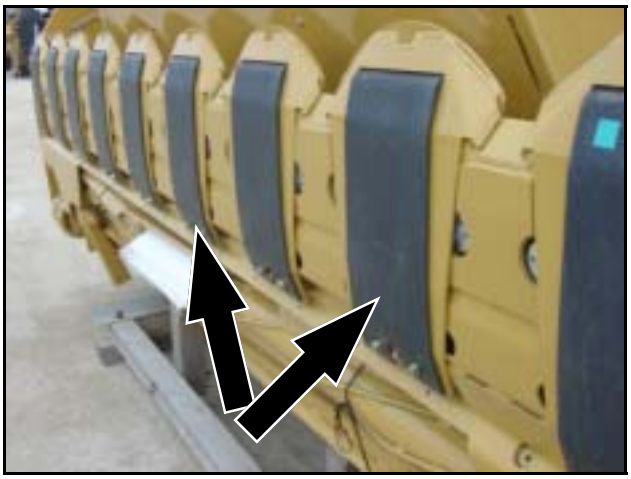
Swath Shield

The swath shield adjustment can be made with minimal effort and no tools. In some high humidity areas, laying out a wide swath cures the crop faster than narrower windrows. The operator can choose the windrow or swath width that is right for a particular area. The swath shield can be set to any position from narrow windrow to full width swath, for greater machine versatility. (Shown with optional actuator)

Swath Shield

Skid Shoes

The wide skid shoes give a longer wear life, and do a better job of floating the cutterbar on soft or damp ground. The wide skid shoes provide better flotation and longer wear life, for improved performance and reduced maintenance costs.



Skid Shoes

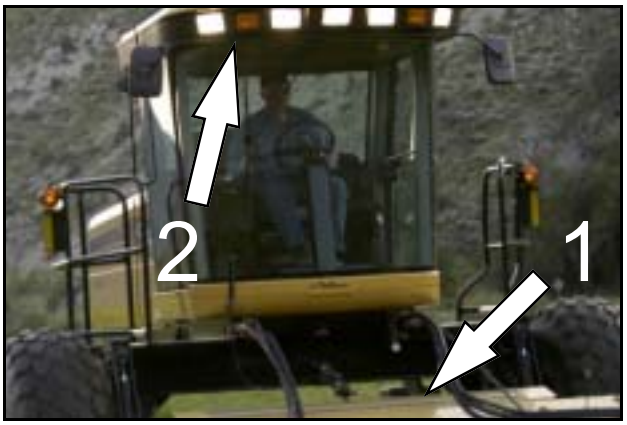
Adjustable Skid Shoes
(15’ 3” DKHB Header Only)

The 15’ 3” DKHB header has an adjustable skid shoe on each end of the header, to help set cutting height. Adjustable gauge wheels are offered as optional equipment.

15’ Skid

Header Walkway

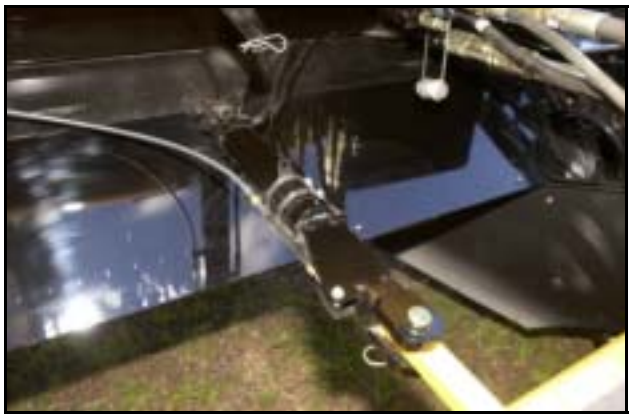
A walkway (1) has been built into the header, and made non-slip by adding two friction strips. The header walkway and hand rails (2) on the cab to hold on to, provide improved access to the cab windows, making them easier to clean.



Header Walkway

Hydraulic Header Tilt

The header tilt cylinder regulates the header angle from 0° up to 10°. For normal operation, a 0 to 4° header tilt angle is used. A steeper angle can be used when cutting down or rank crop. But in the steeper cutting angles, the cut will be wavier. The hydraulic tilt allows the operator to change the header tilt from the cab, better matching field conditions for increased performance.



Header Tilt

Header Lift Cylinder Stop

The header lift cylinder stop is engaged by one lever, which activates a stop on each lift cylinder. The single lever is easy to engage. The stop holds the header lift cylinders extended when engaged, and has a spring to hold the stops away from the cylinder when disengaged. The header lift cylinder stop is effective and easy to use, to securely hold the header in place for service.

Header Stop

Hydraulic Header Flotation

Header flotation is maintained with a nitrogen charged hydraulic accumulator and hydraulic cylinders installed on the tractor. Flotation can be regulated during operation of the machine with an electric switch located on the tractor's instrument panel. The hydraulic flotation allows the header float to better match field conditions, prolonging header life.

Float Cyl

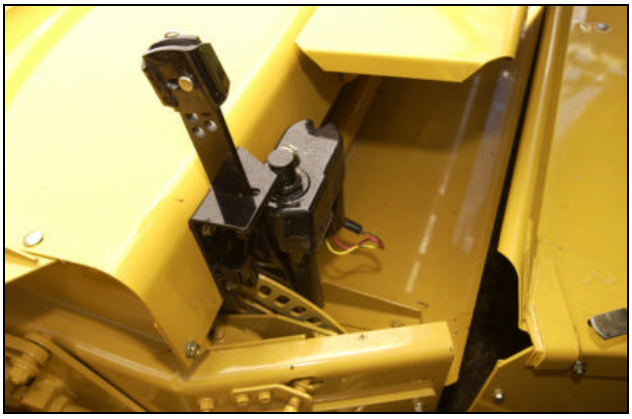
OPTIONAL KITS (FIELD INSTALLED)

Swathboard Actuator Kit

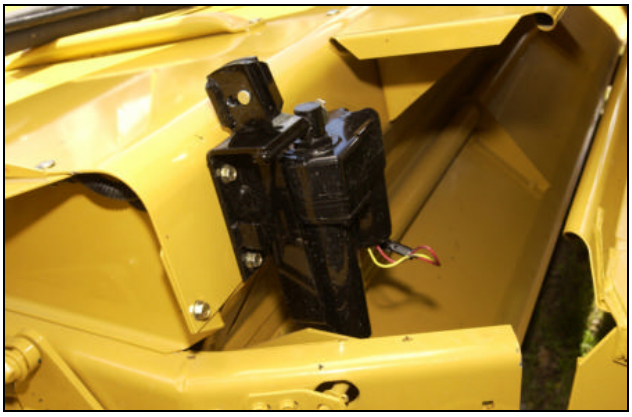
The swathboard actuator kit allows the swathboard position to be controlled from the operator's seat. This allows the operator to change the shape of the swath moving from light to heavy crops without leaving the tractor seat. The kit includes an electric actuator and all hardware for kit installation. The swathboard actuator kit allows the operator to control the swath width from the cab, giving the operator total control of windrow formation.

Wholegoods Kit – BK60962

Estimated Installation Time – 1.0 Hr.



Swathboard Actuator Up



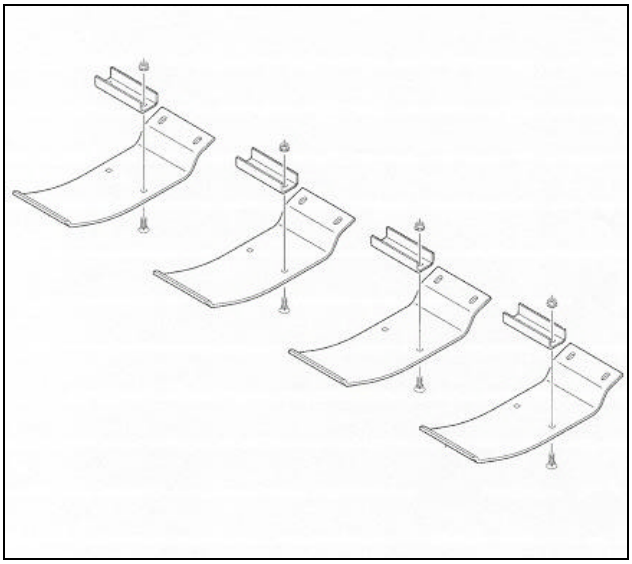
Swathboard Actuator Down

High Skid Shoe Kit

The high clearance skid shoes increase the cutting height of the cutterbar 1 1/4 inch (32 mm). The kit includes four high clearance skid shoes, which are used in place of four of the standard skid shoes.

Wholegoods Kit – BK10995

Estimated Installation Time – 0.5 Hr



High Skids

Gauge Wheels

The gauge wheels are for use in damp field conditions, where skid shoes tend to build up with mud. They are very useful in first year-seeded fields that are still soft. The gauge wheels can also be adjusted to increase cutting height, which is useful when cutting cane type crops. The gauge wheels do less damage to fields, maximizing future crop production.

Wholegoods Kit – BK11096

Gauge Wheels

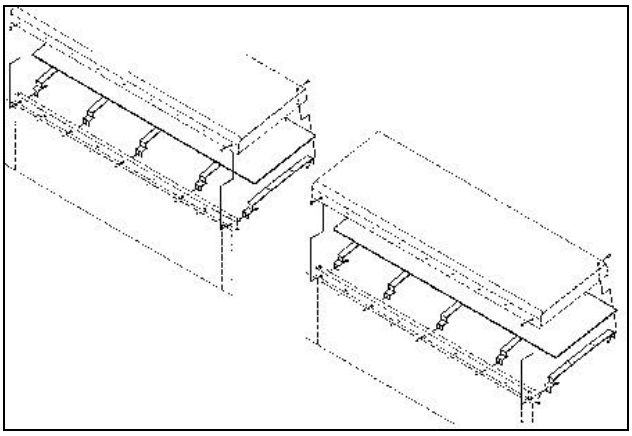
Top Shield Protector

The top shield protector kit is used to prevent denting the top shield from flying rocks or debris. The protection sheets are installed under the top hinged shields over the cutterbar (As shown). The kit includes the protection sheets, plus straps and hardware for installation.

Wholegoods Kit – BK11030 – 12' Head
BK11077 – 15' Head

Estimated Installation Time – 1.0 Hr

Top Shield Protector



Top Shield Protector LD

SERVICE PARTS

Knives

Several versions of knives can be ordered through AGCO Service Parts to contend with different crop conditions. The standard knife on the DKHB header is the 18° bottom bevel.

Four styles of knives are available:

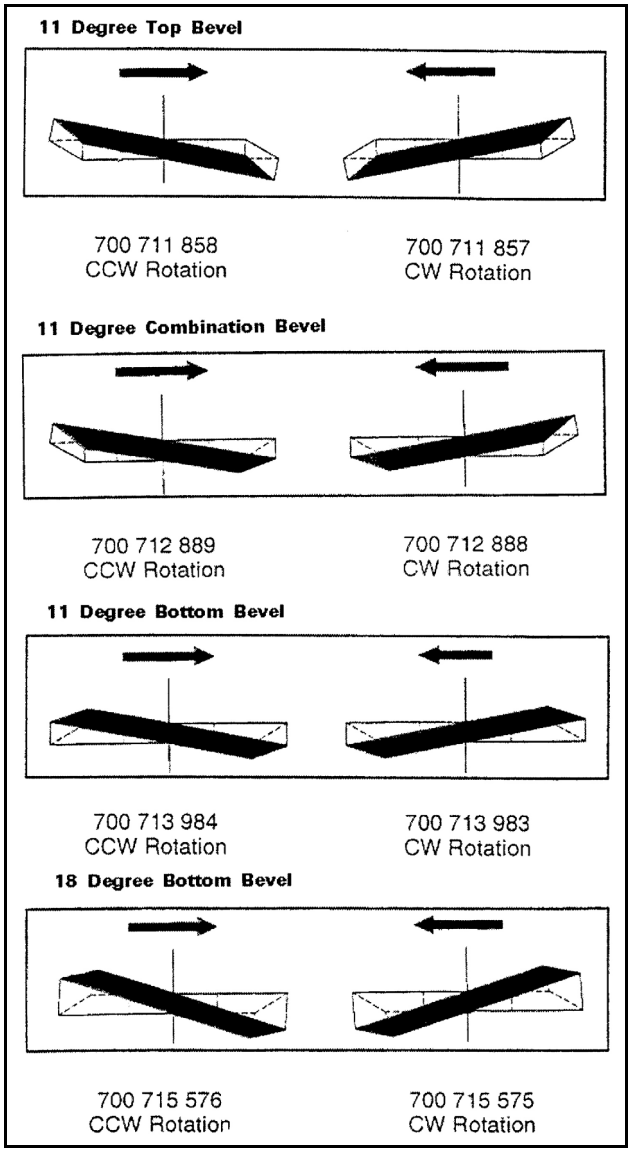
11° Top Bevel – Provides a good quality of cut in most crops and conditions, but if the knife is deflected down, tends to cut into cutterbed.

11° Combination Bevel – One side is bottom bevel, and the other is top bevel. Can be used to compare the quality of cut between the two styles of bevel.

11° Bottom Bevel – Good quality of cut, provides some rock protection, as if knife is deflected, it doesn't tend to dig into the cutterbed. The knife also tends to stay sharper longer.

18° Bottom Bevel – Provides additional lift in down or light crop conditions. Because of the higher lift, the 18° take more power than the 11° knife.

Important: Only install approved AGCO Service Parts as replacements on the header.



Knives

SP115B AHB

INTRODUCTION

The AHB header replaces the AH header. The new header shares many of the proven features of the AH header, along with these improvements:

- Header motors are included with the header. This makes it easier to switch the windrower tractor between the auger and draper header (or between disc, auger, and draper header on the SP185B).

AUGER HEADER SIZES

AHB Double Sickle, Dual Auger Header

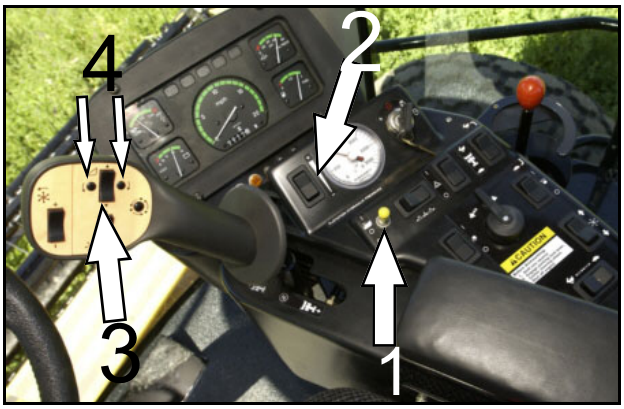
The following sizes of auger headers are available for the SP85B, SP115B, and SP185B tractors:

- 14 foot
- 16 foot
- 18 foot

AHB Field

Header Operating Controls

All the header operating controls for the headers are located in the tractor cab. The header controls for engaging the header (1) and header flotation (2) are located on the side console. The controls for lifting (3) and tilting (4) the header are incorporated into the hydro control lever.

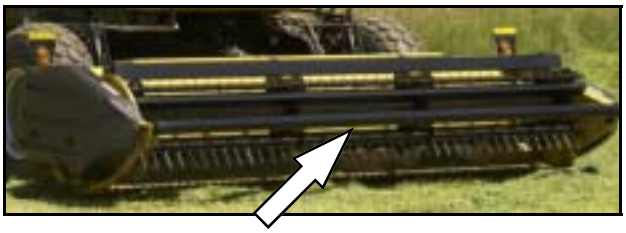


SP115B Console

CUTTERBAR

Lean Bar

The purpose of the lean bar is to push the crop forward and down, so that after being cut by the sickle, it will feed through the augers and into the conditioner butt-end first. The lean bar should catch the crop between one-third and one half the crop height. Proper adjustment ensures crop is not fed head first, which will result in greater leaf shatter. The lean bar's proper adjustment is important for correct crop orientation, leading to higher quality hay or forage.



Lean Bar

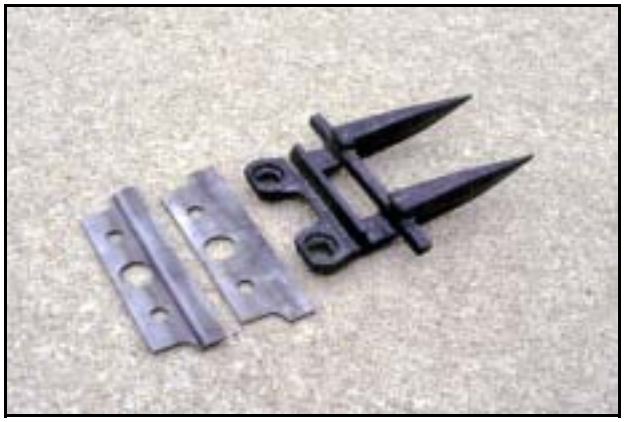
Guards

The header guards have a vertical wear surface which helps keep the sicklebar from riding up, keeping the sickle sections against the ledger of the guard. Cleaner cutting and longer guard and sickle life are the result.

Sickle Guards

Adjustment-free Hold-downs

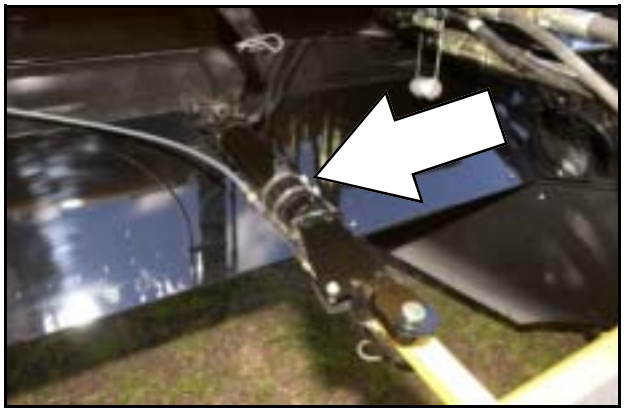
Flat, adjustment-free sickle hold-downs allow a close tolerance to be maintained between the sickle and guards for a easier and cleaner cutting job, with less cutting component and sickle drive mechanism wear. The adjustment-free hold-downs extend the life of the cutting parts twice the normal life, reducing maintenance and service intervals.



Hold-down

Guard Angle

The header tilt cylinder or turnbuckle (SP85B) regulates the guard angle from 5^0 up to 12^0. For normal operation, a 12^0 guard angle is used. At this angle, the guards slide under and pick up the crop better. When rocky conditions or uneven ground exist, a lesser degree angle setting can be set to prevent the sickle guards from picking up rocks or digging in so readily. The guard angle can be easily set to optimize header performance in all crop conditions.



Guard Angle

Half-Swaybar Sickle Drive

The AHB headers feature a half-swaybar sickle drive and a counterbalanced flywheel. The half-swaybar drives the sickles in a smooth, reciprocating motion. Peak starting, stopping, and cutting loads are reduced. The half-swaybar sickle drive provides smooth operation, for longer life of the cutting components.

Sickle Drive

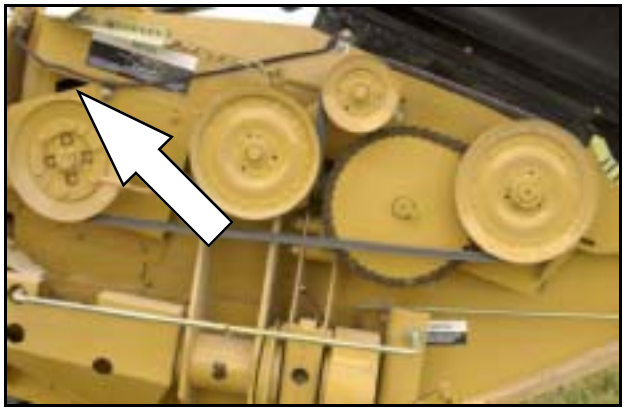
Sickle

The AHB headers use a double sickle, for greater capacity. The sickles use top serrated sections, which are suitable for most crop conditions. The sickle sections are bolted to the sickle instead of riveted, which makes field replacement of broken sections easier. The dual sickles overlap at the center of the header to provide good cutting action and prevent crop stripping where the sickles meet.

Double Sickle

Spare Sickle Storage

The AHB auger headers are equipped with storage for spare sickles. This allows the operator to change a worn or damaged sickle in the field. Spare sickles can be stored on the machine, speeding routine maintenance.



Sickle Storage

REEL

5 Bat Reel

The five bat reel is standard, allowing crop to move to the augers in a smooth and uniform manner. Each reel bat will take a smaller “bite” than a four bat reel, and the conditioner will be fed smoothly. Plugging and bunching at the conditioner roll is minimized. The reel bat spiders are bolted to the bulkheads, so a sixth bat can be installed (available through Service Parts). The five bat reel provides for smooth crop flow through the machine, providing a higher quality windrow or swath.

Reel

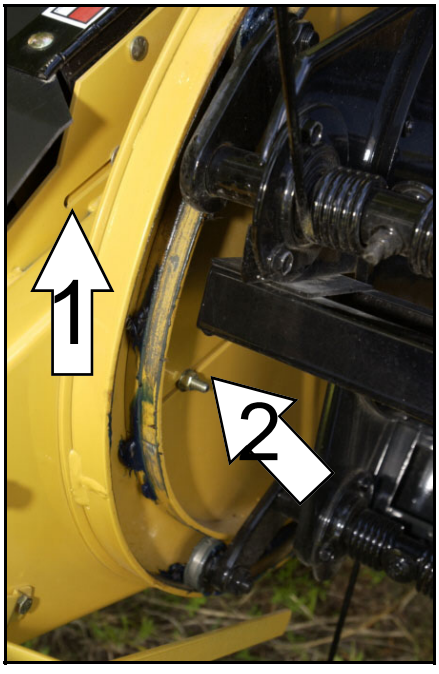
Reel Drive

The reel is belt driven, eliminating the need for a slip clutch. Belt slippage will absorb the shock of reel stoppage by obstructions. The reel speed is adjustable from 65 to 75 rpm by adding shims to the split drive sheave (A slowdown sheave is available through Service Parts). The reel speed can be easily changed to match field conditions, independent of ground speed. The belt reel drive is an effective means of driving and protecting the reel, with minimal maintenance expense.

Reel Drive

Reel Positioning

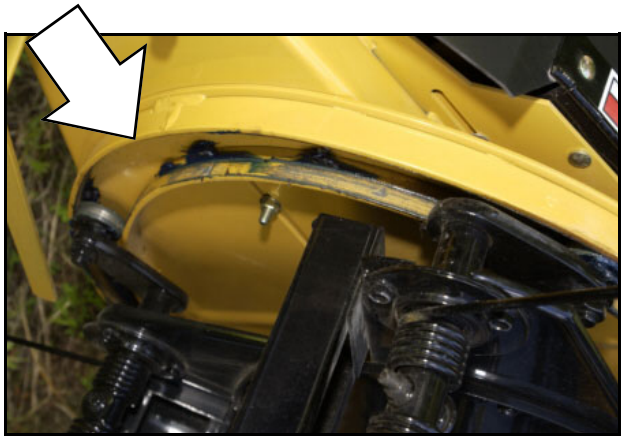
The reel can be adjusted forward and aft (1), or up and down (2). The reel position can be optimized to handle most crop conditions, adding to machine productivity in difficult conditions.



Reel Position

Reel Cam Track

The cam track can be adjusted to control the reel tine release of the crop to the augers. This allows a very wide range of crop conditions to be accommodated with minor adjustment. The reel cam track easily adjusts for a wide range of crops and conditions, for increased machine versatility.



Cam Track

Tine Tube Bearings

The tine tube bearings on the AHB header are sealed ball bearings. The ball bearings don't need to be replaced as often as nylon tine tube bearings. The bearings also allow the tine tube to be split between each spider, making tine replacement quicker and easier. The sealed tine tube bearings last longer, which reduces maintenance and down time.

Tine Tube Brg

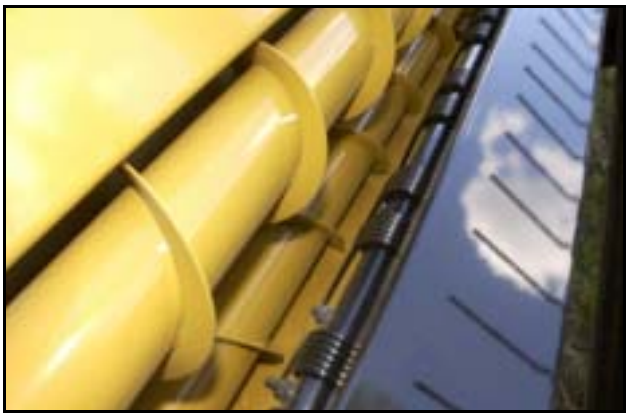
DUAL AUGERS

Counter Rotating Dual Augers

Dual augers convey crop gentler and smoother than single augers. The reason is because dual augers have two “live” feeding elements (the augers) conveying the crop between them, as opposed to one “live” element (auger), and one “fixed” element (header pan). This provides a smoother transition from the reel to the conditioner rolls, for increased capacity with less hesitation and bunching.

Dual Augers

The single auger used by competitors tends to let crop under it, disrupting any butt-first feeding of the crop, allowing leaves to be torn away from the plant stem, and in heavy crop, allows the auger to float up and down. The floating action allows the crop to feed into the conditioner in bunches, causing lumpy windrows and uneven crop drying. The dual augers are fixed in position and do not float. Crop flow is smoother than on a machine with a single floating auger, both in light and heavy crops. The dual augers continue the “butt-first” crop orientation started by the lean bar and reel. Smooth crop flow produces a more uniform drying windrow.



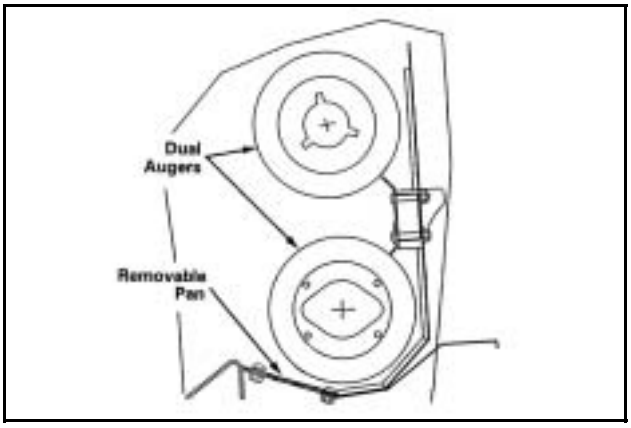
Dual Augers 2

A larger variety of crops can be cut and laid into a smooth windrow, with little or no adjustment. The spacing between augers has been increased over previous models by 1.4”, reducing the possibility of objects wedging between the augers and increasing capacity. The AHB-header also has split augers, with center supports on both the top and bottom augers, for less vibration and reduced chance of damage
The dual augers keep crop correctly oriented, and flowing smoothly and quickly, for increased productivity and higher quality hay.

Auger Center Support

Removable Auger Pans

In conditions with abrasive sand or dirt, the lower header pans can be removed to allow the dirt to fall through and reduce wear on the auger. The removable auger pans help reduce auger wear, extending auger life and reducing maintenance expense.



Auger Pans

Auger Slip Clutches

The augers are slip clutch protected from damage when rocks or other foreign material get into the headers. Each auger has it's own slip clutch. The auger slip clutches protect the augers from damage, prolonging auger and header life.

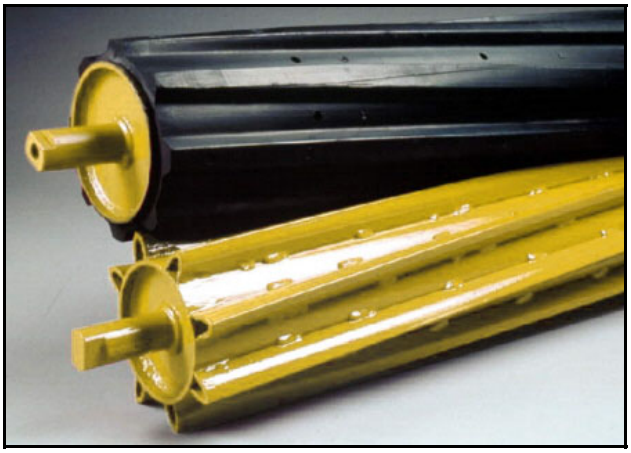
Top Auger Clutch

Lower Auger Slipclutch

HAY CONDITIONER

110 Inch Conditioner Rolls

The 110 inch conditioner rolls are offered as rubber-on-steel or steel-on-steel configurations. Both offer superior crimping conditioning, but the steel-on-steel configuration gives longer life in abrasive soil conditions. The 110 inch wide conditioner rolls are fully engaged, not intermeshed, so the crop is crimped, and not crushed. The crop is crimped by the action of the conditioner rolls cracking the plant stem along its entire length. Crop leaves are retained, for higher hay protein content.



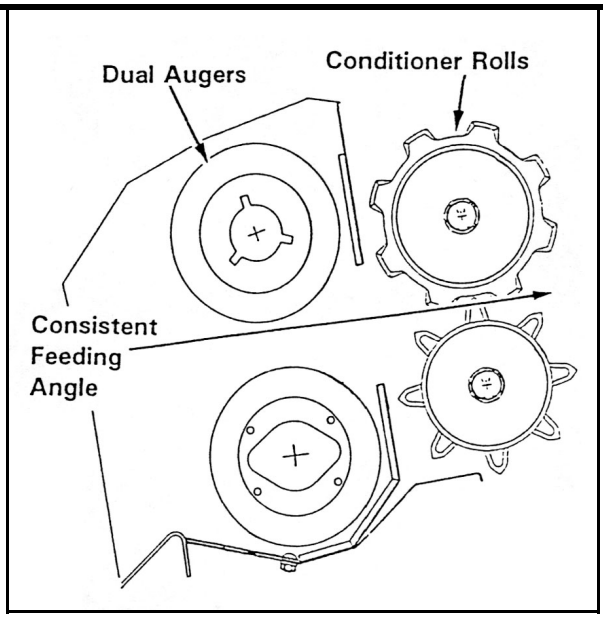
Rubber-steel Rolls

The 110 inch wide rolls allow the crop mat to be spread out, so the rolls aren't opened as wide in heavy crop. This gives the wide rolls the room to open farther, even in the heaviest crops, and since the crop mat is thinner, each individual crop stem can be conditioned more uniformly. The 110" wide, engaging rolls give the header high capacity while crimping the crop uniformly, allowing more acres of high quality crop to be cut per day.

Steel-steel Rolls

Conditioner Roll Feeding Angle

The augers feed the conditioner rolls at a consistent angle. Both auger and conditioner rolls are attached to the header, so head float does not change the angle of the crop entering the conditioner rolls. The consistent feed angle reduces the chance of crop hesitation and bunching, resulting in smoother, quicker drying windrows.



Feed Angle

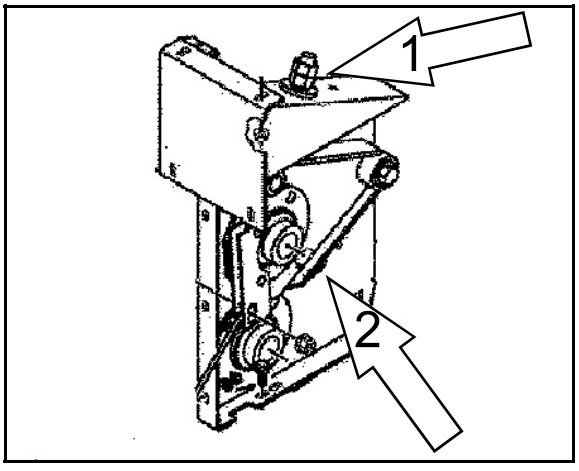
Conditioner Drive

The conditioner is driven through a spur gearbox directly through u-joint drive shafts. The gearbox is continually lubed, so maintenance is reduced. The u-joint driveshafts to the conditioner rolls are very durable, designed to withstand the rolls continual opening and closing. The conditioner drive employs a continually lubed gearbox for minimal maintenance and long service life.

Conditioner Drive

Roll Spacing

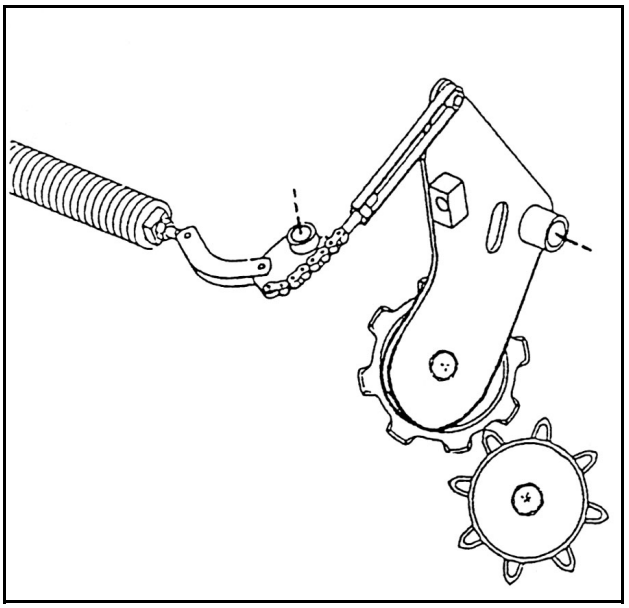
The roll spacing is easily changed with an adjustment bolt (1) on each end of the header. A roll gap gauge (2) is located on each side of the header, so the operator can easily see where the roll gap is set. The ease of adjustment and the ability to check it encourage the operator to keep the rolls in adjustment. The easy roll spacing adjustment allows the operator to maintain ideal roll adjustment with less time and effort, increasing overall machine efficiency.



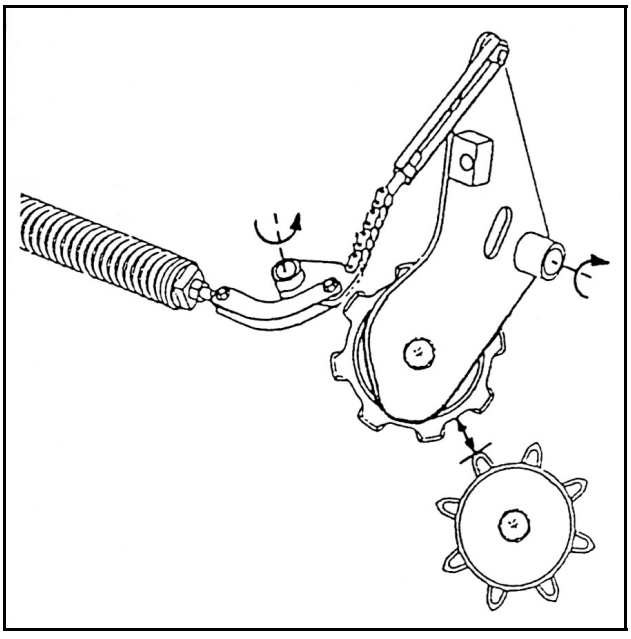
Roll Spacing

Conditioner Roll Pressure Release

The conditioner rolls utilize an over center cam at each end that allows the rolls to open easier when an obstacle or clump of hay is encountered in the field. The over center cam will automatically reset the rolls after the obstruction has passed through the conditioner rolls. The operator is not required to stop and lift the header, as are competitive designs which open the conditioner rolls as the header is raised. The conditioner roll pressure release system allows the operator to keep cutting with less lost time, and more productive time, for a faster hay harvest.



Cam 1



Cam 2

HEADER MAINFRAME

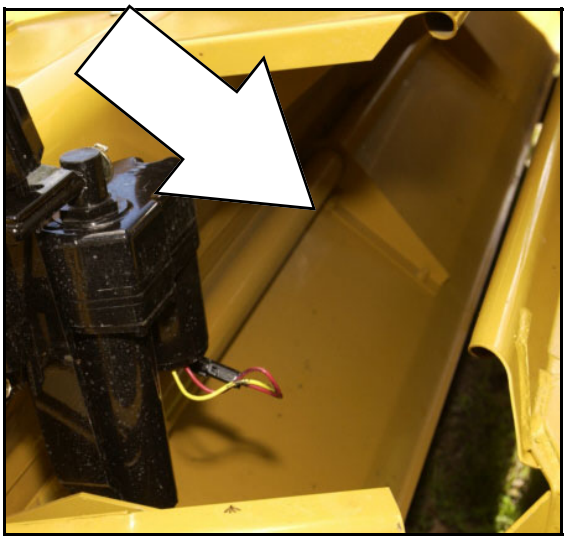
Forming Shields

The side forming shields are non-metallic, reducing crop buildup and enhancing windrow formation. The shields also won't rust when the machine sits over the winter. The adjustable rear deflector shield slows crop momentum to allow it to fall gently into a tall, fluffy, quick drying windrow. The forming shields and rear deflector can be set to the operator's preference. The forming shields allow the operator the versatility to set them based on crop conditions, so the crop can dry quicker and be harvested with minimum delay.

Forming Shields

Swath Shield

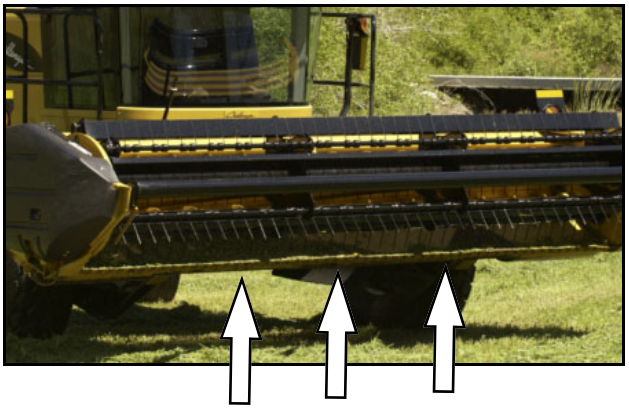
The swath shield adjustment can be done with minimal effort and no tools. In some high humidity areas, laying out a wide swath cures the crop faster than narrower windrows. The operator can choose the windrow or swath width that is right for a particular area. The swath shield can be set to any position from narrow windrow to full width swath (40—96"), for greater machine versatility. (Shown with optional Swathboard Actuator)



Swath Shield

Header Wear Plate

A full width wear plate is standard on the bottom of all auger headers. The wear plate allows the header to skid over field obstructions, without damage to the header shell. The header wear plate helps prolong header life, and reduces header maintenance.



Wear Plate

Skid Shoes

Skid shoes can be raised or lowered easily without tools to adapt to different crops or field conditions. The skid shoes can be adjusted for various cutting heights up to five inches. The skid shoes are easily set for maximum operator convenience and crop adaptability.

Skid Shoe

Hydraulic Header Flotation

Flotation can be regulated during operation of the machine from the cab with an electric switch located on the tractor's instrument panel. Flotation pressure can be raised or lowered on the go, depending on crop or field conditions. The header flotation is accomplished with a nitrogen charged hydraulic accumulator and hydraulic cylinders installed on the tractor. The hydraulic header flotation allows the operator to adapt the header flotation to any crop or field condition on the go, improving timeliness and reducing potential header damage.

Flotation Cylinder

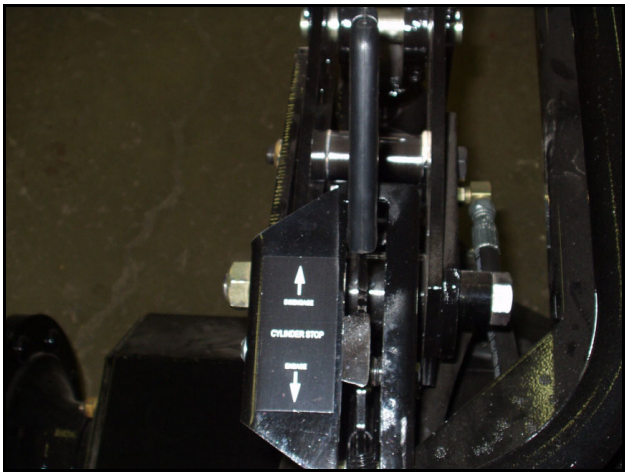
Header Walkway

A walkway has been added to the header. The walkway can be accessed from the left tractor platform. The walkway is fitted with slip-resistant tape, and handles have been added on the cab, so the operator has a place to stand when cleaning the windows.

Header Walkway

Header Lift Cylinder Stop

To hold the header up in a secured position, a header lift cylinder stop is provided for the lift cylinder. In the up position, the header stop is placed between the lift cylinder and the lift mechanism when the header is raised. In the storage position, the header stop is moved back and held out of the way by a spring assembly.



Header Stop

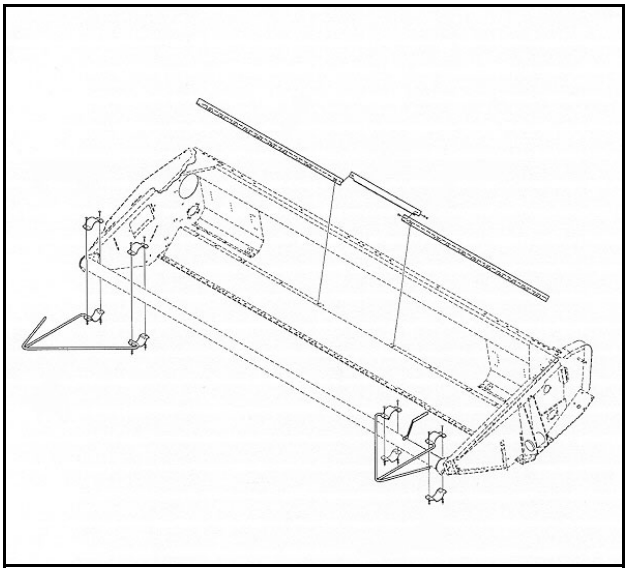
OPTIONAL KITS (FIELD INSTALLED)

Crop Divider Kit

The crop divider kit is designed to divide tall crops, so that the header end panels do not knock down the crop and cause stripping. Lower auger angles are included to help feed tall cane type crops. The operator stays more productive, as by separating the crop before it gets to the header, more crop will be put into the windrow, and less will be knocked down and wasted.

Wholegoods Kit – BK60918

Estimated Installation Time – 0.5 Hr.



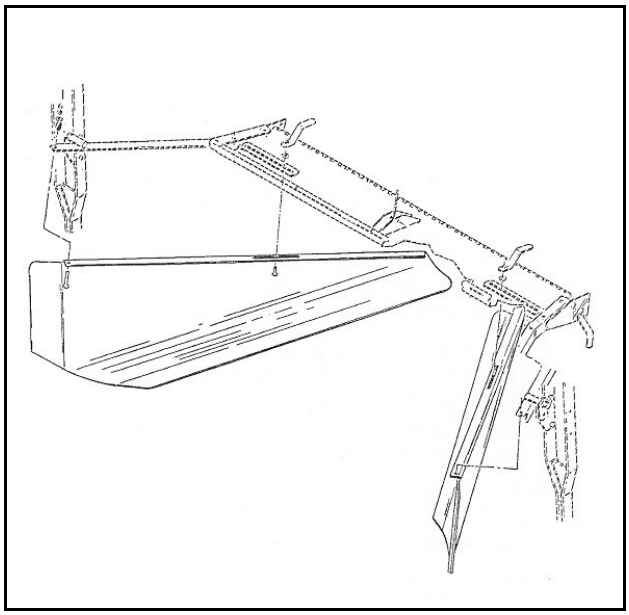
Crop Divider

Narrow Windrow Forming Kit

The narrow windrow forming kit is to be used in light crop conditions where a narrow windrow is desired, but standard shields leave a ragged windrow. The kit includes longer and deeper side forming shields. The standard shields should be reinstalled in heavier crop where the rear deflector shield is required, or when a full width windrow or swath is desired.

Wholegoods Kit – BK60576

Estimated Installation Time – 0.5 Hr.



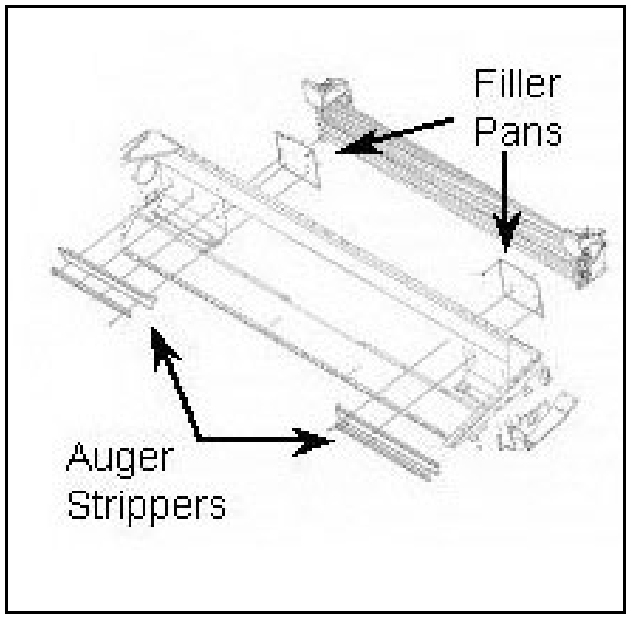
Narrow Windrow

Hay Conditioner Close-up Kit

The hay conditioner close-up kit is used to help move light crop more to the center of the conditioner rolls to help form narrow windrowers. The standard windrow forming shields can be utilized. The kit includes two filler pans to close off 12" on each end of the conditioner rolls. Longer auger strippers are also supplied.

Wholegoods Kit – 14' – BK60928
16' – BK60929
18' – BK60930

Estimated Installation Time – 3.0 Hr.



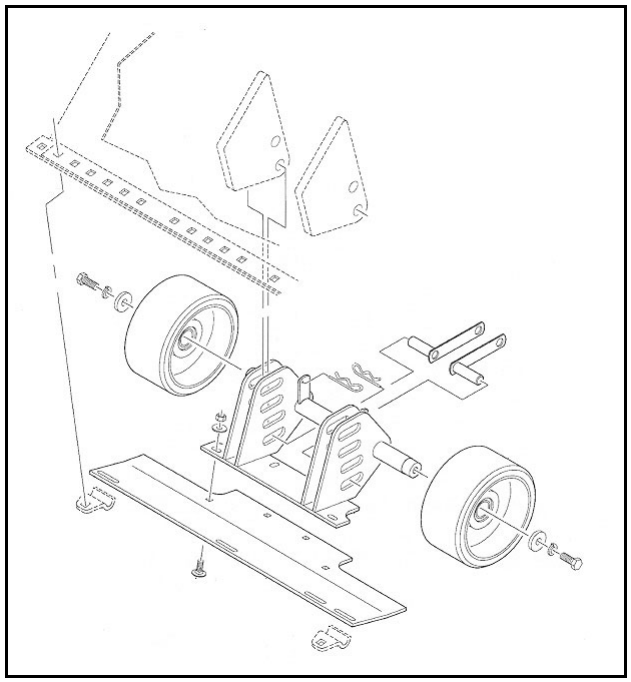
Auger Strippers

Gauge Wheel Kit

The gauge wheel kit is for use in damp field conditions where skid shoes tend to build up with mud. The 14', 16', and 18' headers utilize two wheels per side. Gauge wheels are very useful in first year seeded fields that are still soft, as they do less damage to fields, maximizing future crop production.

Wholegoods Kit – 14' – BK61016
16'-18' – BK60562

Estimated Installation Time – 1.0 Hr.



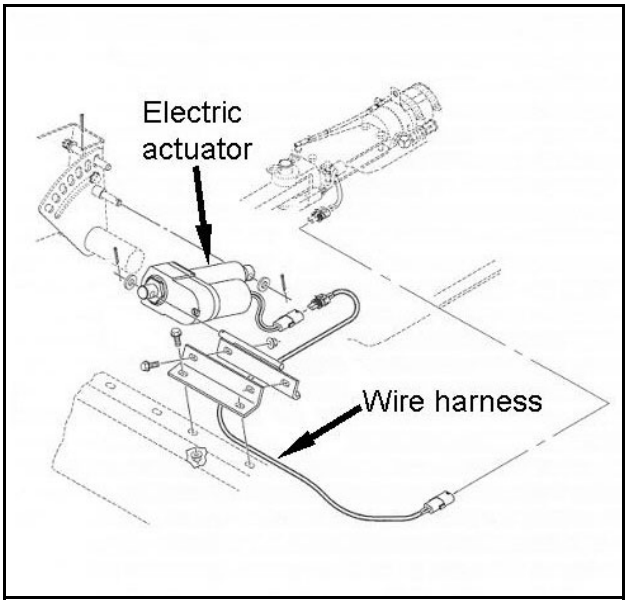
Gauge Wheel

Swathboard Actuator Kit

The swathboard actuator kit allows the operator to change the shape of the swath in light or heavy crops without leaving the tractor seat. The kit includes an electric actuator and all the wiring and hardware needed to attach to the header swathboard.

Wholegoods Kit – BK60917
BK61150 actuator adapter also required per Service Bulletin CWR 04-06.

Estimated Installation Time – 1.0 Hr.



Swathboard Actuator

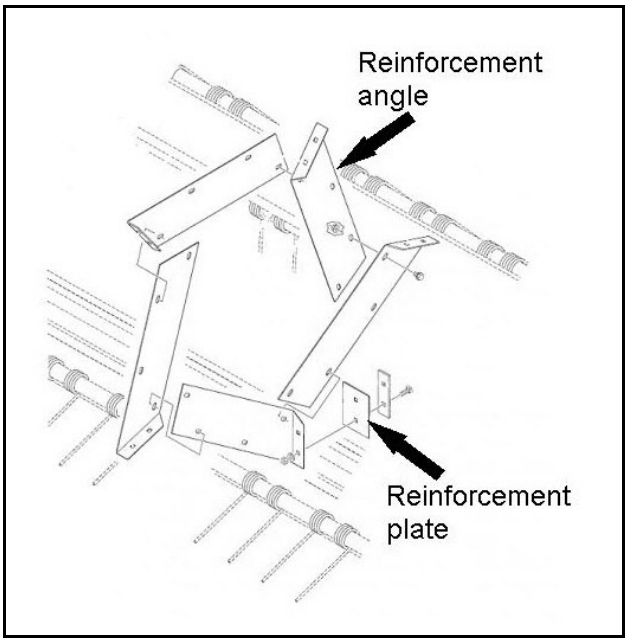
Heavy Crop Reel Spider Kit

The heavy crop reel spider kit is used to tie together the reel bats between the bulkheads, and reduce reel bat bending caused by extremely heavy crop, wet crop, or obstructions.

The kit includes spider supports, support plates, and the hardware required to add three sets of plates between existing bulkheads.

Wholegoods Kit – 14' and 16' - BK60575
18' - BK60938

Estimated Installation Time - 3.0 Hr.



Reel Spider

DHW Draper Header

INTRODUCTION

The DHW draper header is available in three sizes of center delivery: 22', 25', and 30'. There are also three sizes of Double Swath (shiftable headers: 22', 25', and 30'.

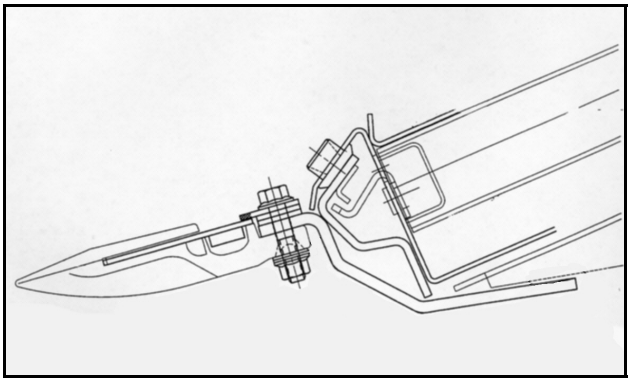
The DHW header replaces the DH header. The new header shares many of the proven features 0f the DH header, along with these improvements:

- Header will mount to SP85B and SP115B tractors without an additional mounting kit. DHW takes only one simple kit to install on SP185B.
- Increased frame strength on all sizes.
- 30' Header has increased torque tube strength.
- Header electric fore-aft is now a field installed kit.
- Top link has two position mounting for additional cut range.

CUTTERBAR

Cutterbar Profile

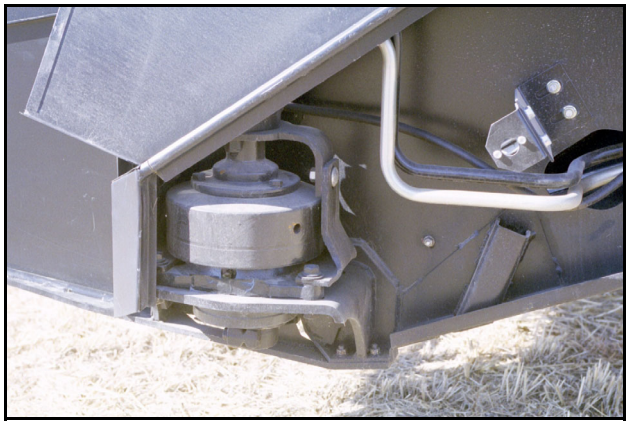
The cutterbar has been designed for smooth crop flow over the top. The skid plate along the bottom of the cutterbar also gives it the ability to cut close to the ground.



Cutterbar

Sickle Drive

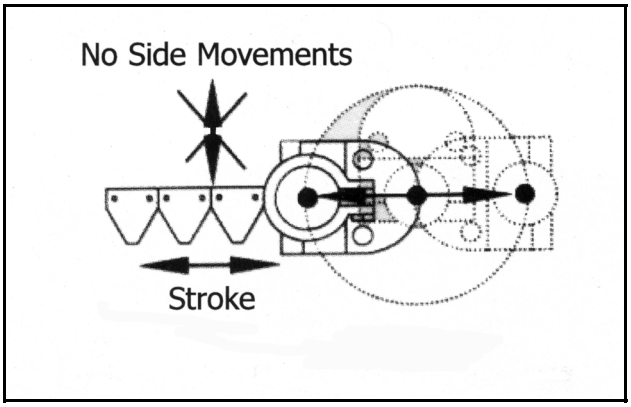
The sickle drive is a hydraulically driven planetary gear system. The planetary gear system is in rotation at all times, so there are no peak starting and stopping loads as in a wobble box system. The drive also maintains a high cutting force, so it works well in all cereal, grass and forage, and specialty crops. The sickle drive system is very simple, as it uses no shafts, belts, or sheaves, reducing maintenance.



Sickle Drive

Sickle Drive Planetary Gearbox

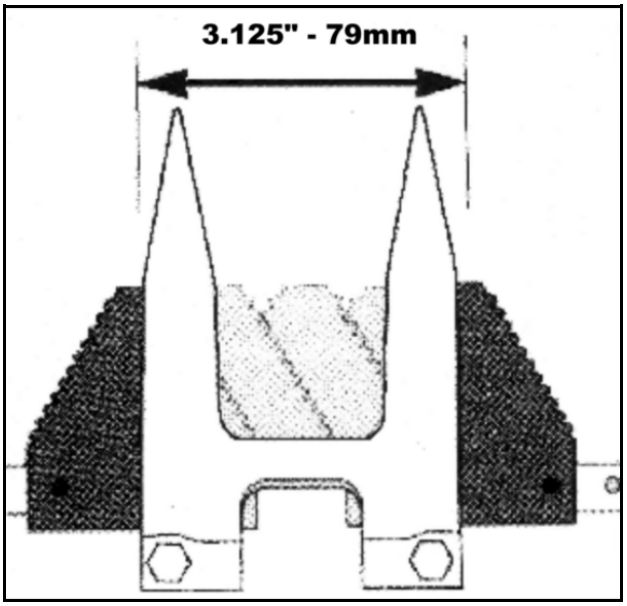
The planetary gears produce an absolutely linear knife movement compared to a wobble box system. The gears are in exact alignment with the knife, so the knife doesn't move up and down, or side to side during it's stroke, for better cutting performance, and less sickle and guard wear.



Planetary Gearbox

Sickle Over-Stroke

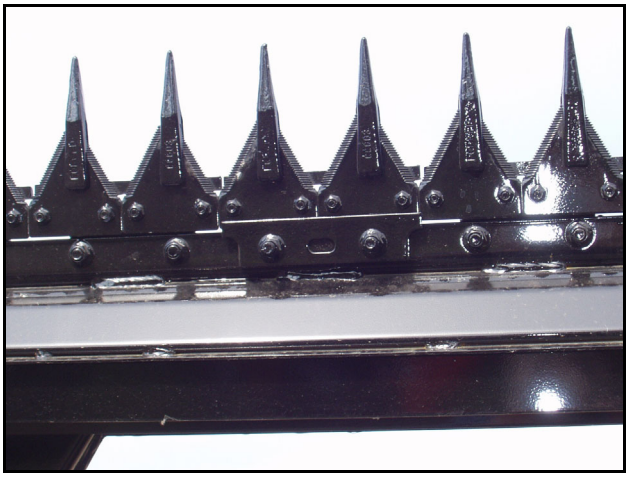
The sickle is designed to over-stroke in each direction. The over-stroke ensures that the sickle will travel its full length of stroke, especially in a difficult to cut crop, resulting in less sickle knock.



Sickle Over-stroke

Hold Down Clips

The hold down clips require no adjustment, but if bent, can easily be straightened with a hammer. The sickle hold downs don't need regular adjustment, which saves the operator time.



Hold downs

Draper Guards

The draper guards deflect crop over the front edge of the draper belts, preventing crop from getting under the belts, and wrapping on the draper rolls. By keeping the crop from wrapping on the rolls, it is easier to keep the draper belt tracking true, prolonging the draper belt life.

Draper Guard

DRAPER CONVEYOR

Draper Belts

The draper belts are made of heavy duty polyester with a nylon ply for extra durability. The belt has been improved with heavier nylon reinforcement, giving the belt more rigidity and less stress concentration. The belts are 41 in (1041 mm) wide, with fiberglass rod reinforced cross slats. The heavy duty belt with reinforced cross slats provides a longer lasting draper belt for less maintenance costs.

Draper Belts

Draper Shift

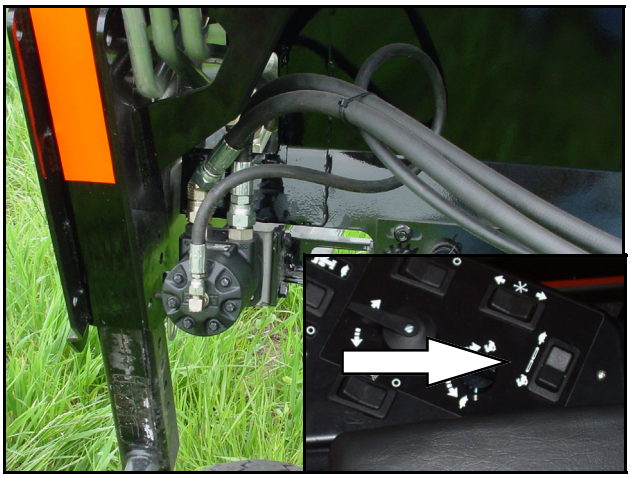
The shiftable draper header can operate in the center delivery mode, or with the drapers shifted to the right or left. To double swath, the operator shifts the left draper to the center using the two position switch in the cab (Arrow). The two draper carriages can then be locked together, using the lever on the header. The carriages can then be shifted for right or left end delivery. When the draper carriages are shifted, the draper belt rotation is also set automatically.

Draper Shift

Center delivery draper heads can have the right draper deck manually shifted, and the hoses to the draper drive motor switched, for right end double swathing.

Draper Speed

The draper belts on both sides are driven by a hydraulic motor, and are adjustable using a toggle switch on the right control console (Arrow). The draper hydraulic motor speed is adjustable from 0 to 600 feet per minute, so the operator can adjust the speed to match the crop conditions.



Draper Belt Tension Adjustment

The draper belts are tightened using a ratchet style tension adjustment. The draper belt tension is maintained by rotating the top of the ratchet gear toward the outside of the header to tighten the belts. The ratchets can be easily released for belt storage. Proper draper belt tension results in longer belt life and lower repair costs.

Draper Tension

HEADER FRAME

End Panel Shield

The sickle drive on the left end panel is shielded, to help reduce the incidence of crop hair-pinning, and crop stripping.

End Shield

Crop Dividers

The crop dividers divide the crop on each end of the header to reduce the possibility of stripping. Also, the guard position is centered between the end panels, which also helps reduce crop stripping.

Crop Divider

Swath Opening

The opening between the drapers can be adjusted for various crop conditions. The standard narrow opening is used for light or normal crops. The opening can be adjusted between 54” and 70” (1372 and 1778 mm). The wider openings are used for heavier or fluffier crops such as Canola or Mustard. A Narrow Opening Kit is available to decrease the opening even further to 42” (1076 mm).

Swath Opening

Header Walkway

A walkway with a non-slip surface is designed into the header. The walkway can be accessed from the tractor's left side platform. The walkway with handles on the cab gives the operator a non-slip platform to clean the cab windows.

Header Walkway

Hydraulic Guard Angle

The hydraulic guard angle adjustment is standard on the SP115B and SP185B. It is available as an optional kit on the SP85B. The guard angle adjustment is made from the operator's seat, and controls the tilt angle of the head. When the guard angle is used in conjunction with the gauge wheels, the cutting height can be changed. The guard angle adjustment can also be used to get under down crop. The header tilt can also be used to control the tilt of the draper conveyors, affecting how the crop is laid into the swath (herringbone pattern).

Hydraulic Guard Angle

HYDRAULICS

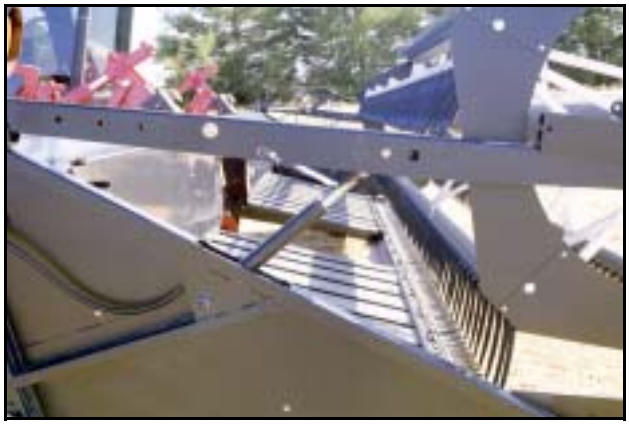
Reel Drive

The reel speed is infinitely adjustable from the tractor seat from 0 to 63 rpm. It is beneficial to adjust the reel speed depending on crop, field conditions, and ground speed.

Reel Drive

Reel Lift

The reel height is adjusted hydraulically with the reel lift cylinders. The reel lift is controlled by the top button on the cab travel control lever. The operator can adjust the reel height on the go to best match changing crop conditions.



Reel Lift

Reel Fore-aft Adjustment

The reel can be easily adjusted fore and aft in relationship to the cutterbar. Loosen two bolts on each end of the reel mounting, and the reel can be slid forward or backwards. The Electric Reel Fore-aft Kit is available to adjust reel position from the cab.

Reel Fore-aft

OPTIONAL KITS (FIELD INSTALLED)

Choice of Reel
Challenger offers both the Hart Carter and the Universal UII pickup reels. Each reel has it's own benefits, so the customer can choose the reel best suited to the conditions.

Hart-Carter (HCC) Series II Pickup Reel

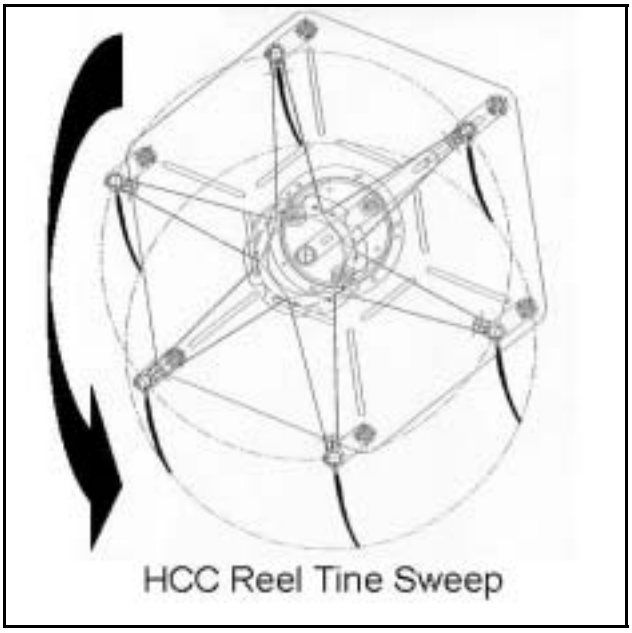
The Hart Carter reel features a smooth crop flow of material into the header. The reel features a simple design, fewer parts, and reduced weight than reels from other manufacturers, but greater reel arm strength because of higher arm rigidity. The reel is equipped with plastic polytine fingers, which are more durable than steel tines, for less maintenance.

HCC Reel

The HCC is a six bat reel. The reel sweep is very smooth from the time it enters the crop until crop release. The reel tine cam is adjustable for varying crop conditions.

Wholegoods Kit – 18' – BK61119
22' – BK61120
25' – BK61121
30' – BK61122

Estimated Installation Time – 4.5 Hr.



HCC Reel Sweep

Universal Pickup Reel (UII)

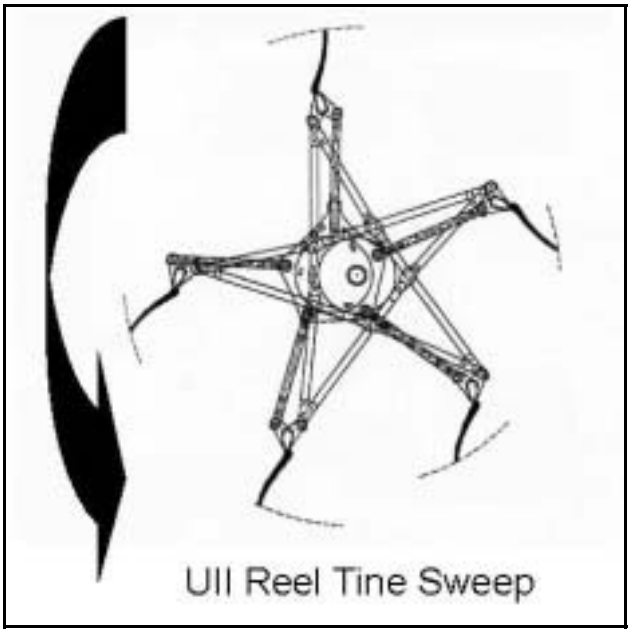
The Universal reel is designed to separate, hold, and continuously deliver crop onto the drapers in a smooth, even flow. The UII reel is robustly built, for extra long life. The reel is equipped with plastic polytine fingers, which are more durable than steel tines, for reduced maintenance.

UII Reel

The UII reel has five bats. The reel tine sweep shows the "flip over" action of the reel tines after it has released the crop. The flip over action has the effect of reduced crop wrapping on the reel tines. The reel tine cam is adjustable for varying crop conditions.

Wholegoods Kit - 18' – BK61047
22' – BK61048
25' – BK61049
30' – BK61050

Estimated Installation Time – 4.5 Hr.



UII Reel Sweep

Fixed Gauge Wheels

The 16 x 6.50-8 gauge wheels are used to keep the header cutting parallel to the ground, and to keep the header from digging in on uneven ground. The gauge wheels can be set in one of 32 height settings. The gauge wheels allow the header to cut lower to the ground than with the optional skid shoes.

Wholegoods Kit – BK61058

Estimated Installation Time – 1.0 Hr.

Fixed Gauge Wheels

Swivel Gauge Wheels

The gauge wheels are used to keep the header cutting parallel to the ground, and swivel to reduce crop damage when turning in the field. The gauge wheels can be set in one of 32 height settings. The gauge wheels allow the header to cut lower to the ground than with the optional skid shoes.

Wholegoods Kit – BK61134

Estimated Installation Time – 1.0 Hr.

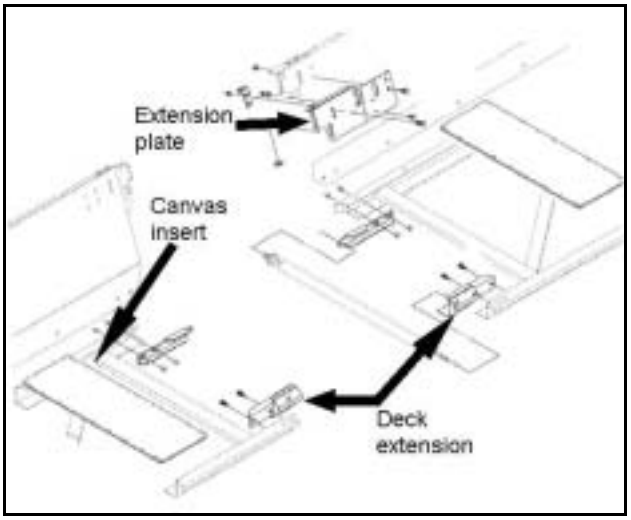
Swivel Gauge Wheel

Narrow Opening Insert Kit

The narrow opening insert kit decreases the size of the opening between the drapers. The kit includes two pieces of draper belting to extend each side draper belt. With the extensions installed, the opening can be adjusted between 42” and 54” (1067 to 1372 mm).

Wholegoods Kit – BK61078

Estimated Installation Time – 1.0 Hr.



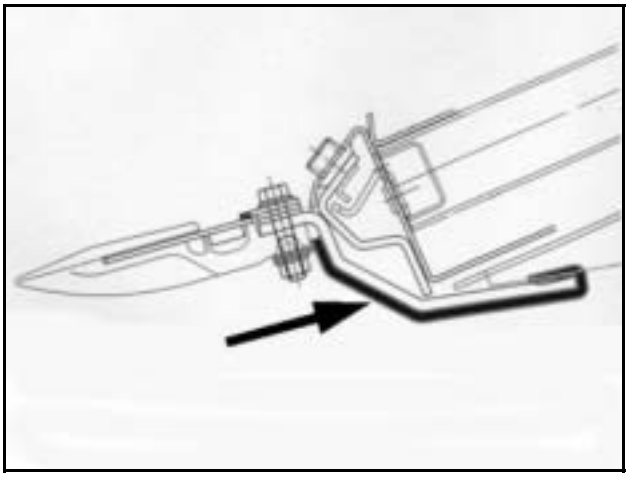
Narrow Opening Insert

Plastic Wear Plate on Cutterbar

The plastic wear plate is used to reduce wear on the underside of the cutterbar when cutting low to the ground. When cutting crops low to the ground, the ideal combination is the plastic wear plate and gauge wheels. Do not use the plastic wear plates with skid shoes.

Wholegoods Kit – 18' - BK61123
22' – BK61124
25' – BK61125
30' – BK61126

Estimated Installation Time – 3.0 Hr.



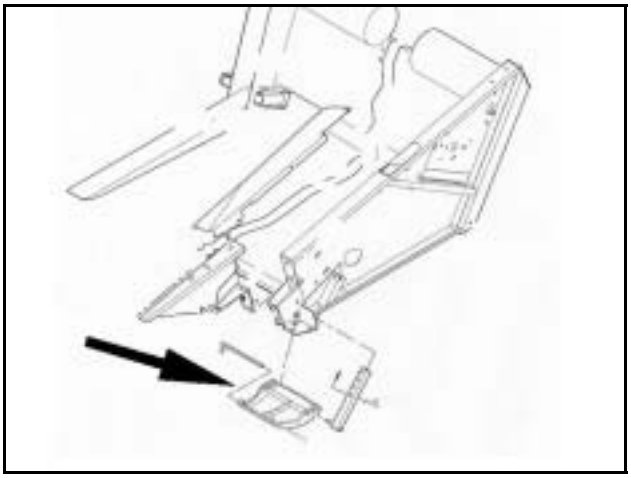
Wear Plate

Skid Shoes

The skid shoes help provide extra support on the ends of the header when cutting on uneven ground. Because of their location at the front of the header, the skid shoes won't allow the header to cut as low to the ground as when using the plastic wear plate.

Wholegoods Kit – BK61060

Estimated Installation Time – 1.0 Hr.



Skid shoe

Electric Reel Fore-Aft

The electric reel fore-aft employs an electric actuator on each side of the reel to provide on the go reel position adjustment.

Wholegoods Kit – BK61127

Estimated Installation Time – 1.0 Hr.

Reel fore-aft

MODEL ..... SP85B Self-Propelled Windrower Tractor

DIMENSIONS AND WEIGHTS

Length Overall with Header in (mm) 257.5 (6540)
Wheelbase in (mm) 140.0 (3556)
Height
Top of Cab in (mm) 132.3 (3360)
Clearance under Walking Beam in (mm) 40.7 (1034)
Clearance under Frame in (mm) 39.8 (1010)
Width
Outside of Hubs in (mm) 135 (3429)
Outside of Largest Tires in (mm) 146.7 (3725)
Tread Width; Drive Tires in (mm) 127.5 (3238)
Tread Width, Tail Wheels
Minimum in (mm) 84.4 (2144)
Maximum in (mm) 120.0 (3048)
Weight (Approximate
Without Header lb (kg) 8500 (3855)

TIRES

Drive Wheels ..... 18.4 x 26 Turf Tread
16.9 x 28 Bar Tread
Tail Wheels (forked casters) ..... 14L-16.1, 6 Ply Implement Rib
(formed casters ..... 12.5L-15, 6-ply Implement Rib

ENGINE

Model ..... Caterpillar 3054C-Direct Injection Naturally Aspirated
Horsepower @ 2400 rpm (per SAE J1995 Standard) 85
High Idle rpm 2550
Displacement cu in (L) 269 (4.41)
Cooling System qt (L) 22 (20.8)
Cooling Fan Diameter in (mm) 23 (586)
Fuel ..... ASTM No.2 Diesel
Fuel Tank Capacity US Gal (L) 60 (227)

ELECTRICAL SYSTEM

System Voltage 12
Ground ..... Negative
Batteries
Quantity 2
Capacity, Each ..... 12V 1000 Amp CCA
Type ..... SAE J537, Group 31 P
Alternator
Manufacturer ..... Nippondenso
Output ..... 110 Amperes

GROUND DRIVE SYSTEM

Final Drive
- Type ..... Double Reduction Planetary
- Tandem Pump ..... Sauer-Danfoss, Series M44
- Motors ..... Sauer-Danfoss, Series M44 Fixed Displacement
- Speed (Approximate) mph (km/h) ..... 0 to 11 (0 to 18)

HEADER DRIVE SYSTEM

Pump ..... Sauer-Danfoss, Series 46

HYDRAULIC SYSTEM

Ground Drive System
- Relief Pressure psi (kPa) 5500 (37,925)

Header Drive System
- Maximum Pressure psi (kPa) 5000 (34,475)

Header Lift System
- Relief Pressure psi (kPa) 2500 (17,237)

HEADER FLOTATION SYSTEM

Type ..... Hydraulic with Accumulator
Adjustable from Cab

Accumulator Charge Pressure psi (kPa) 900 (6206)

CAB

Cab Glass Tinted sq ft (m2) 73 (6.8)

Steering Column ..... Adjustable Pivot and Tilt

Standard Monitor
- Analog Gages ..... Speedometer, fuel level, engine oil pressure, engine temperature and voltage
- Warning Lamps ..... Charge pressure, coolant level, intake air restriction, hydraulic oil level, and turn indicator

Optional Monitor ..... Multiple function digital monitor
Ground speed, header speed, engine speed, cutting rate, cut area, total area

AIR CONDITIONING

System size BTU/hr 22,000

Refrigerant ..... HFC 134a

Capacity lb (kg) 4.0 (1.8)

Compressor ..... Sanden 507H
- Displacement cu in (cc) 9.5 (154.9)

ACCESSORIES

Lighting
- Work Lamps ..... 7 rectangular halogen lamps and 1 rectangular enhanced halogen lamp
- Marking and turn signals ..... 4 rectangular amber lamps, 2 rectangular red lamps, and 2 round amber lamps

Rear View Mirrors ..... Right-hand side, left-hand side, and in cab
Controls ..... Shape-coded Handles

LUBRICATION

Engine Oil
- Quantity with Filter Change qt (L) 7.3 (6.9)
- Type of Fluid ..... SAE 15W 40

Hydraulic System
- Quantity Total System US Gal (L) 26 (98.4)
- Quantity Reservoir US Gal (L) 21 (79)
- Type of Fluid ..... Engine Oil, SAE 15W 40

Planetary Gearbox
- Quantity, each pt (L) 3.0 (1.3)
- Lubricant ..... 85W90 or 90W Gear Oil

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

SPECIFICATIONS
SP115B WINDROWER

MODEL ..... SP115B Self Propelled Windrower

DIMENSIONS AND WEIGHTS

Length Overall with Auger Header in (mm) 257.5 (6540)
With Draper Header in (mm) 280.3 (7120)
Wheelbase in (mm) 140 (3556)
Height
Top of Cab in (mm) 132.3 (3360)
Clearance under Walking Beam in (mm) 40.7 (1034)
Clearance under Frame in (mm) 39.8 (1010)
Width
Outside of Hubs in (mm) 144 (3659)
Outside of Largest Tires in (mm) 146.7 (3725)
Tread Width, Drive Tires in (mm) 127.5 (3238)
Tread Width, Tail Wheels
Minimum in (mm) 84.4 (2144)
Maximum in (mm) 120 (3048)
Weight (Approximate)
Without header lb (kg) 8600 (3901)

TIRES

Drive Wheels ..... 18.4 x 26, Turf Tread
16.9 x 28, Bar Tread
Tail Wheels ..... 14L-16.1, 6-Ply Implement Rib

ENGINE

Model ..... Caterpillar 3054E-Direct Injection Turbocharged
Horsepower @ 2500 rpm (per SAE J1995 Standard) 115
High idle rpm 2650
Displacement cu in (L) 269 (4.41)
Cooling System qt (L) 22 (20.8)
Cooling Fan Diameter in (mm) 23 (584)
Fuel ..... ASTM No.2 Diesel
Fuel Tank Capacity US Gal (L) 60 (227)

ELECTRICAL SYSTEM

System Voltage 12
Ground ..... Negative
Batteries
- Quantity 2
- Capacity, Each ..... 12V 1000 CCA
- Type ..... SAE J537, Group 31 P

Alternator
- Manufacture ..... Denso Corporation
- Output 110Amperes

GROUND DRIVE SYSTEM

Final Drive
- Type ..... Double Reduction Planetary

Tandem Pump ..... Sauer-Danfoss M44
Motors ..... Sauer-Danfoss M46, Variable Displacement
Speed (Approximate)
- Low Range mph (km/h) ..... 0 to 8 (0 to 13)
- High Range mph (km/h) ..... 0 to 15 (0 to24)

HEADER DRIVE SYSTEM

Pump ..... Sauer-Danfoss, M46

HYDRAULIC SYSTEM

Ground Drive System
- Relief Pressure psi (kPa) 5500 (37,925)

Header Drive System
- Relief Pressure psi (kPa) 5000 (34,475)

Header Lift System
- Relief Pressure psi (kPa) 2500 (17,237)

HEADER FLOTATION SYSTEM

Type ..... Hydraulic with Accumulator, Adjustable from Cab
Accumulator Charge Pressure psi (kPa) 900 (6206)

CAB

Cab Glass Tinted sq ft (m2) 73 (6.8)
Steering Column ..... Adjustable Pivot and Tilt
Standard Monitor
- Analog Gages ..... Speedometer, fuel level, engine oil pressure, engine temperature, and voltage
- Warning lamps ..... Charge pressure, coolant level, intake air restriction, hydraulic oil level, and turn indicator

Optional Monitor ..... Multiple function digital monitor
Ground speed, header speed, engine speed, cutting rate, cut area, total area

AIR CONDITIONING

System size BTU/hr.....22,000
Refrigerant ..... HFC 134a
Capacity lb (kg) 4.0 (1.8)
Compressor .....Sanden 507H
Displacement cu in (cc)..... 9.5 (154.9)

ACCESSORIES

Lighting
Work lamps.....7 rectangular halogen lamps and 1 rectangular enhanced halogen lamp
Marking and turning signals .....4 rectangular amber lamps, 2 rectangular red lamps, and 2 round amber lamps
Rear View Mirrors..... right-hand side, left-hand side, and in cab
Controls ..... Shape-coded Handles

LUBRICATION

Engine Oil
Quantity with Filter Change qt (L) 7.3 (6.9)
Type of Fluid ..... SAE 15W 40
Hydraulic System
Quantity Total System US Gal (L).....26 (98.4)
Quantity Reservoir US Gal (L) 21 (79)
Type of Fluid .....Engine Oil, SAE 15W 40
Planetary Gearbox
Quantity, Each pt (L) 3.0 (1.3)
Lubricant ..... 85W90 or 90W Gear Oil

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

MODEL ..... SP185B Self-Propelled Windrower Tractor

DIMENSIONS AND WEIGHTS

Length Overall with Header in (mm) 255.9 (6500)
Wheelbase in (mm) 140.0 (3556)
Height
Top of Cab in (mm) 133.4 (3388)
Clearance under Walking Beam in (mm) 40.7 (1034)
Clearance under Frame in (mm) 41.0 (1042)
Width
Outside of Hubs in (mm) 144 (3659)
Outside of Largest Tires in (mm) 155.5 (3949)
Tread Width; Drive Tires in (mm) 131.9 (3350)
Tread Width, Tail Wheels
Minimum in (mm) 84.4 (2144)
Maximum in (mm) 120.0 (3048)
Weight (Approximate)
Without Header lb (kg) 9,430 (4277)
With Rotary Header lb (kg) 14,020 (6359)

TIRES

Drive Wheels ..... 23.1 x 26 Turf Tread
18.4 x 28 Bar Tread
Tail Wheels ..... 14L-16.1, 6 Ply Implement Rib

ENGINE

Model ..... Cummins Turbocharged Diesel 5.9QSB-185A
Horsepower @ 2500 rpm (per SAE J1995 Standard) 185
High Idle rpm 2600
Displacement cu in (L) 359 (5.9)
Radiator fins/in (fins/cm) 7 (2.8)
Cooling System qt (L) 36 (34.1)
Cooling Fan Diameter in (mm) 24.5 (622)
Fuel ..... ASTM No.2 Diesel
Fuel Tank Capacity US Gal (L) 80 (303)

ELECTRICAL SYSTEM

System Voltage 12
Ground ..... Negative
Batteries
- Quantity 2
- Capacity, Each ..... 12V 1000 Amp
- Type ..... SAE J537, Group 31 P

Alternator
- Manufacturer ..... Robert Bosch
- Output ..... 95 Amperes

GROUND DRIVE SYSTEM

Final Drive
Type ..... Double Reduction Planetary
Tandem Pump ..... Sauer Danfoss M44
Motors ..... Sauer Danfoss M46, Variable Displacement
Speed approximate
- Low range mph (km/h) ..... 0 to 12 (0 to 18)
- High range mph (km/h) ..... 0 to 16 (0 to26)

HEADER DRIVE SYSTEM

Pump ..... Sauer Danfoss, Series 90
Motors ..... (2) Sauer-Danfoss M44

HYDRAULIC SYSTEM

Ground Drive System
- Relief Pressure psi (kPa) 5500 (37,925)

Header Drive System
- Maximum Pressure psi (kPa) 5000 (34,474)

Header Lift System
- Relief Pressure psi (kPa) 2500 (17,237)

HEADER FLOTATION SYSTEM

Type ..... Hydraulic with Accumulator,Adjustable from Cab
Accumulator Charge Pressure psi (kPa) 900 (6206)

CAB

Cab Glass Tinted sq ft (m2) 73 (6.8)
Steering Column ..... Adjustable Pivot and Tilt
- Analog Gages ..... Speedometer, fuel level, engine oil pressure, engine temperature, and voltage
- Warning lamps ..... Charge pressure, coolant level, intake air restriction, hydraulic oil level, and turn indicator

Standard Digital Performancel Monitor ..... Ground speed, header speed, engine speed, cutting rate, cut area, total area

AIR CONDITIONING

System Size BTU/hr 22,000
Refrigerant ..... HFC 134a
Capacity lb (kg) 4.0 (1.8)
Compressor ..... Sanden 507H
Displacement cu in (cc) 9.5 (154.9)

ACCESSORIES

Lighting
Work Lamps ..... 7 rectangular halogen lamps and 1 rectangular enhanced halogen lamp
Marking and turn signals ..... 4 rectangular amber lamps, 2 rectangular red lamps, and 2 round amber lamps
Rear View Mirrors ..... Right-hand, Left-hand and in Cab
Controls ..... Shape-coded Handles

LUBRICATION

Engine Oil
Quantity with Filter Change qt (L) 16 (15)
Type of Fluid ..... SAE 15W 40, API CE, CDII/CF-4
Hydraulic System
Quantity Total System US Gal (L) 26 (98.4)
Quantity Reservoir US Gal (L) 21 (79)
Type of Fluid ..... Engine Oil, SAE 15W 40
Planetary Gearbox
Quantity, each pt (L) 3 (1.3)
Lubricant ..... 90W Gear Oil or 80W90
Step-up Gearbox
Quantity, pt (L) 3.9 (1.8)
Lubricant ..... 90W Gear Oil or 80W90

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

MODEL ..... AHB Auger Header

DIMENSIONS AND WEIGHTS

14 FT Header
- Width of Cut in (mm) 168 (4276)
- Width (Overall) in (mm) 188.4 (4786)
- Weight (Less Forming Shields) lb (kg) 3850 (1746)

16 FT Header
- Width of Cut in (mm) 192 (4877)
- Width (Overall) in (mm) 212.4 (5396)
- Weight (Less Forming Shields) lb (kg) 4100 (1860)

18 FT Header
- Width of Cut in (mm) 216 (5486)
- Width (Overall) in (mm) 236.4 (6005)
- Weight (Less Forming Shields) lb (kg) 4400 (1996)

HEADER

- Header Drive ..... Hydraulic
- Jackshaft Speed rpm 1300
- Guard Angle (Adjustable) ..... 5° to 12°
- Header Lift Range in (mm) to in (mm) ..... -3 (76.2) to +26 (+660)
- Header Flotation ..... Hydraulic Adjustable from the Control Console

CUTTERBAR

- Speed spm (cpm) 1840 (920)
- Stroke in (mm) 3 (76.2)
- Minimum Cutting Height in (mm) 1 (25.4)
- Guard Spacing in (mm) 3 (76.2)
- Drive ..... Timed Gearboxes with Half Swaybar
- Number of sickles 2

REEL

- Type ..... Metal Bat, Sealed Ball Bearings on Tine Tubes
- No. of Reel Bats 5
- Tine Action ..... Cam Track Actuated
- Drive ..... Belt and Chain
- Diameter in (mm) 42 (1067)
- Speed (Adjustable) rpm ..... 65 to 75
- Tines ..... Heavy Duty

AUGERS

Type	Dual, Opposed Rotation
Diameter	
Upper Auger in (mm)	9 (229)
Lower Auger in (mm)	9 (229)
Speed	
Upper Auger rpm	330
Lower Auger rpm	525
Drive	Sealed no. 50 Roller Chain

HAY CONDITIONER

Length in (mm)	110 (2794)
Diameter Rubber on Steel	
Upper Rubber Roll in (mm)	8 (203.2)
Lower Roll Steel in (mm)	7.75 (196.9)
Diameter Steel on Steel in (mm)	7.75 (196.9)
Speed rpm	920
Drive	Gearcase with /U-joint to the Rolls
Type	Engaging Rollers
Material, 14’ and 16’	Rubber on Steel or Steel on Steel
Material 18’	Steel on Steel Only
Material discharge	Adjustable
Windrow/Swath Width in (mm)	40 to 96 (1016 to 2438) (Depending on Conditions)

LUBRICATION

Sickle Drive Gearbox	
Capacity pt (L)	1.5 (0.7)
Lubricant	SAE EP 90W gear oil
Hay Conditioner Gearbox	
Capacity pt (L)	2.5 (1.2)
Lubricant	SAE EP 90W gear oil

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

MODEL .....DHW Center Delivery And Shiftable Draper Header

DIMENSIONS AND WEIGHTS

Overall Width
- Center Delivery and Double Swath Model
  - 22 ft (6.7 m) in (m) 278 (7.06)
  - 25 ft (7.6 m) in (m) 314 (7.98)
  - 30 ft (9.1 m) in (m) 374 (9.50)

Width of Cut
- Center Delivery and Double Swath Model
  - 22 ft (6.7 m) in (m) 267 (6.78)
  - 25 ft (7.6 m) in (m) 303 (7.70)
  - 30 ft (9.1 m) in (m) 363 (9.22)

Weight (Approximate)
- 22 ft (6.7 m) Center Delivery
  - (Without Reel) lb (kg)..... 2150 (975)
  - *(With Reel) lb (kg) 2750 (1247)
- 25 ft (7.6 m) Center Delivery
  - (Without Reel) lb (kg)..... 2400 (1089)
  - *(With Reel) lb (kg) 3100 (1406)
- 30 ft (9.1 m) Center Delivery
  - (Without Reel) lb (kg)..... 2900 (1315)
  - *(With Reel) lb (kg) 3700 (1678)
- 22 ft (6.7 m) Shiftable Draper
  - (Without reel) lb (kg) 2250 (1021)
  - *(With Reel) lb (kg) 2850 (1293)
- 25 ft (7.6 m) Shiftable Draper
  - (Without Reel) lb (kg)..... 2500 (1134)
  - *(With Reel) lb (kg) 3200 (1451)
- 30 ft (9.1 m) Shiftable Draper
  - (Without Reel) lb (kg)..... 3000 (1361)
  - *(With Reel) lb (kg) 3800 (1724)

*Heaviest reel available for each width

HEADER

- Drive - Draper and Reel ..... Hydraulic
- Guard Angle (4 Cylinder Tractors, Adjustable) ..... 9° to 19°
- Guard Angle (6 Cylinder Tractors, Adjustable) ..... 4° to 18°
- Flotation ..... Hydraulic (on tractor)
- Size of Opening
  - With Draper Inserts
    - Maximum in (mm) 54 (1372)
    - Minimum in (mm) 42 (1067)
  - Without Draper Inserts
    - Maximum in (mm) 70 (1778)
    - Minimum in (mm) 54 (1372)

CUTTERBAR

- Speed spm (cpm) 1300 (650)
- Stroke in (mm) 3.125 (79.38)
- Drive ..... Inline Gearbox
- Guard Spacing in (mm) 3 (76)
- Number of Sickles ..... One

REEL

- Number of Reel Bats ..... 5 or 6
- Type
  - Pickup ..... Optional, HCC or UII
- Diameter in (mm) 52 (1320)
- Drive ..... Hydraulic and Chain
- Speed rpm ..... 0 to 60

DRAPER

- Drive ..... Hydraulic
- Speed (Adjustable from cab) ft/min (m/min) ..... 0 to 600 (0 to 183)
- Width in (mm) 41 (1041)
- Type ..... Rubberized Draper with Reinforced Slats

LUBRICATION

- Grease fittings ..... No.2 Multi-purpose Lithium Grease
- Gearbox ..... No.2 Multi-purpose Lithium Grease

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

SPECIFICATIONS
DKHB DISC HEADER

MODEL ..... DKHB Disc Header

DIMENSIONS AND WEIGHTS

12’ Header
- Width (Overall) in (mm) 150 (3810)
- Weight (With Forming Shields) lb (kg) 3490 (1583)

15’ 3” Header
- Width (Overall) in (mm) 186 (4724)
- Weight (With Forming Shields) lb (kg) 4280 (1941)

HEADER

- Header Drive ..... Dual Hydraulic Motors
- Input Shaft Speed (Maximum) rpm 2600
- Header Lift Range in (mm) to in (mm) ..... -3.3 (-84) to +25.1 (+638)
- Header Flotation ..... Radial and Vertical Hydraulic, Adjustable from Cab
- Header Tilt ..... Hydraulic, Adjustable from Cab
- Header Angle ..... 0° to 10°
- Height Adjustment ..... Adjustable Skid Shoes

CUTTERBED

- Cutting Width
  - 12’ Header in (mm) 144 (3658)
  - 15’ 3” Header in (mm) 183 (4648)
- Cutting Height
  - Range in (mm) ..... 0.75 to 3 (19 to 76)
  - Typical at 4° Header Angle in (mm) 1.5 (38)
- Number of Discs
  - 12’ Header 8
  - 15’ 3” Header 10
- Number of Knives
  - 12’ Header ..... 16 (2 per Disc)
  - 15’ 3” Header ..... 20 (2 per Disc)
- Knife Circle Diameter in (mm) 23.6 (600)
- Disc Drive ..... Hydraulic Motor and U-joints
- Disc Speed (Maximum) rpm 2600
- Tip Speed (Maximum) mph (km/h) 184 (296)
- Knives ..... Swing-away Reversible
- Cutterbed Design ..... Spur Gears

HAY CONDITIONER

- Type ..... Engaging Rollers, Steel on Steel
- Length in (mm) 110 (2794)
- Diameter in (mm) 7.75 (197)
- Speed (maximum)
  - 12' Header rpm 1100
  - 15' 3" Header rpm 1280
- Drive
  - 12' Header ..... Matched Set of HA Section Belts
  - 15' Header ..... 4HA Banded Belt
    With Enclosed Gear Case and U-joints
- Windrow / Swath Width in (mm) ..... 40 to 96 (1016 to 2438)
  (Depending on Conditions)
- Turbulence Reduction Roll
  - Length in (mm) 110 (2794)
  - Roll Diameter in (mm) 4.75 (121)
  - Speed, Maximum
    - 12' Header rpm 1100
    - 15' 3" Header rpm 1280
  - Drive
    - 12' Header ..... Matched Set of Two HA Section Belts
    - 15' 3" Header ..... U-joint

LUBRICATION

- Gearbox
  - Capacity qt (L) 0.8 (0.71)
  - Lubricant ..... SAE EP 90W or 80W90 Gear Oil
- Cutterbed
  - 12' Capacity qt (L) 2.5 (2.4)
  - 15' 3" Capacity qt (L) 3.3 (3)
  - Lubricant ..... SAE EP 90W or 80W90 Gear Oil
- Hay Conditioner Gear Case
  - Quantity oz (kg) 4.0 (0.11)
  - Lubricant ..... SAE EP 90W or 80W90 Gear Oil

OPTIONAL KITS (FIELD INSTALLED)

- Gauge Wheels
- Electric Swathboard Actuator
- High Skid Shoes
- Door Protector

(Specifications and design are subject to change without notice and without liability therefore.)

Challenger Sales Engineering, August 2004

COMPETITIVE COMPARISONS
SP85B WINDROWER

POWER UNITS	CHALLENGER® SP85B	NH HW300 CASE IH WDX901	MACDON 9250
ENGINE			
Make	Caterpillar 3054C-DINA	Genesis	Cummins B3.9
Displacement Cu. In.	269	304	239
Aspiration	Natural	Natural	Natural
Horsepower	85	87	80
Rated rpm	2,400	2,070	2,500
Cooling System U.S. Qt.	22	16	19
Aspirated Air Pre-Cleaner	Yes	Yes	Yes
Air Intake Screen Cleaner	Standard	Standard	Standard
Number of Batteries	2	1	1 (Not Included)
Alternator Rating Amps	110	85	105
Fuel-Tank Capacity U.S. gal.	60	110	75
HYDRAULIC SYSTEM			
Header Drive System gpm	29	29	20
Drive System Relief Pressure psi	5000	4000	DNA
Reservoir Capacity U.S. gal.	20	8	15.2
HEADER DRIVE			
Drive System	Hyd. Pump/Motor	Hyd. Pump/Motor	Gearbox/Belt
Engagement Control	Hyd. Valve	Hyd. Valve	Hyd. Cyl / Belt Idler
Header Reverser	Standard	Optional	NA
HYDRAULIC TRANSMISSION			
Make	Sauer-Danfoss	Sauer-Danfoss	Eaton
Number of Motor Speeds	1	1	1
System Relief Pressure psi	5,500	5,000	5,000
FINAL DRIVES			
Type	Planetary	Planetary	Planetary
Ratio	34.6:1	32:1	28:1
GROUND SPEEDS			
Maximum Road mph	11	12	10
Maximum Field mph	11	12	10
TIRES			
Drive Wheels	18.4 x 26	16.9 x 24	21.5L–16.1
Tailwheels	14L x 16.1	31 x 13.5-15	9.5L-14 16.5L-16.1
DIMENSIONS			
Height to Top of Cab In.	132.3	122	122.5
Drive End Width In.	146.7	144	141.3
Tread Width (Tailwheels) In.	84.4 - 120	90 - 120	120
Tread Width (Drive Tires) In.	127.5	125	118.1
Wheel Base In.	140	135	112.8 or 127.7
Ground Clearance In.	39.8	34	38.3
Overall Length W/Header In.	257.5	259	252
Weight (Less Header) Lbs.	8,500	8,265	7,019

COMPETITIVE COMPARISONS
SP85B WINDROWER

POWER UNITS	CHALLENGER® SP85B	NH HW300 CASE IH WDX901	MACDON 9250
CAB			
Steering Wheel Tilt Positions	9	Infinite	Infinite
Steering Column Tilt Positions	5	7	INA
Instructional Seat	Yes	Optional	Yes
Header Lift Control	Electro-hyd	Electro-hyd	Electro-hyd
Header Tilt from Cab	Optional	Standard	Optional
Header Drive Control	Electric	Electric	Electric
Instrumentation	Analog	Electronic	Electronic
Engine/Transmission Protection	Light/Buzzer	Auto-Shut Down	Light/Buzzer
Ground Speed Indicator	Yes	Yes	Yes
Windshield Wiper	Optional	Optional	Yes
Number of Cab Mirrors	3	3	2
Tinted Glass ft²	73	INA	INA

NA - Not Available
INA - Information Not Available

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COMPETITIVE COMPARISONS
SP115B WINDROWER

POWER UNITS	CHALLENGER® SP115B	JOHN DEERE 4895	MACDON 9352*I*
ENGINE			
Make	Caterpillar 3054E-DIT	John Deere	Isuzu 4.3L
Displacement Cu. In.	269	274	262
Aspiration	Turbo	Turbo	Turbo
Horsepower	115	115	110
Rated rpm	2,500	2,500	2,300
Cooling System U.S. Qt	22	26	19
Aspirated Air Pre-Cleaner	Yes	Yes	Yes
Air Intake Screen Cleaner	Standard	Standard	Standard
Number of Batteries	2	1	1 (Not Included)
Alternator Rating Amps	110	120	110
Fuel-Tank Capacity U.S. Gal.	60	85	75
HYDRAULIC SYSTEM			
Header Drive System gpm	29	26.8	20
Drive System Relief Pressure psi	5000	5500	DNA
Reservoir Capacity U.S. Gal.	20	25	15.2
HEADER DRIVE			
Drive System	Hyd. Pump/Motor	Hyd. Pump/Motor	Gearbox/Belt
Engagement Control	Hyd. Valve	Hyd. Valve	Hyd. Cyl / Belt Idler
Header Reverser	Standard	Standard	NA
HYDRAULIC TRANSMISSION			
Make	Sauer-Danfoss	Eaton	Eaton
Number of Motor Speeds	2	2	2
System Relief Pressure psi	5,500	5500	5,000
FINAL DRIVES			
Type	Planetary	Planetary	Planetary
Ratio	41.6/1	41.42:1	28:1
GROUND SPEEDS			
Maximum Road mph	15	14	15.5
Maximum Field mph	8.5	8	9.0
TIRES			
Drive Wheels	18.4 x 26	18.4 x 26	19.5L - 24
Tailwheels	14L x 16.1	14.lL x 16	16.5L-16.1 11 - 16
DIMENSIONS			
Height to Top of Cab In.	132.3	123	122.5
Outside Width In.	146.7	146	141.3
Tread Width Tailwheels In.	84.4 - 120	INA	120
Tread Width (Drive Tires) In.	127.5	146	118.1
Wheel Base In.	140	139	134.7
Ground Clearance In.	39.8	35	38.3
Overall Length W/Header In.	257.5	205	252
Weights (Less Header) Lb.	8,600	INA	7,569

COMPETITIVE COMPARISONS
SP115B WINDROWER

POWER UNITS	CHALLENGER® SP115B	JOHN DEERE 4890	MACDON 9352*I*
CAB			
Steering Wheel Tilt Positions	9	Yes	Infinite
Steering Column Tilt Positions	5	4	INA
Instructional Seat	Yes	Yes	Yes
Header Lift Control	Electric	Electric	Electric
Header Tilt from Cab	Standard	Standard	Optional
Header Drive Control	Electric	Electric	Electric
Speed Range Control	Electric	Electric	Electric
Instrumentation	Electronic	Electronic	Electronic
Engine/Transmission Protection	Light/Buzzer	Electronic/Buzzer	Light/Buzzer
Ground Speed Indicator	Yes	Yes	Yes
Windshield Wiper	Optional	Yes	Yes
Number of Cab Mirrors	3	2	2
Heater	Yes	Yes	Yes
Tinted Glass ft²	73	51.5	INA

NA - Not Available
INA - Information Not Available

COMPETITIVE COMPARISONS
SP115B WINDROWER

POWER UNITS	CHALLENGER® SP115B	NH HW320 CASE IH WDX1101	NH HW305S CASE IH WDX1202S	NH HW325 CASE IH WDX1202
ENGINE				
Make	Caterpillar 3054E-DIT	NH Genesis	NH Genesis	NH Genesis
Displacement Cu. In.	269	304	274	274
Aspiration	Turbo	Turbo	Turbo	Turbo
Horsepower	115	108	120	120
Rated rpm	2,500	2,070	2,300	2,300
Cooling System U.S. Qt	22	16	INA	INA
Aspirated Air Pre-Cleaner	Yes	Yes	Yes	Yes
Air Intake Screen Cleaner	Standard	Standard	Standard	Standard
Number of Batteries	2	1	1	1
Alternator Rating Amps	110	85	135	135
Fuel-Tank Capacity U.S. Gal.	60	110	73	120
HYDRAULIC SYSTEM				
Header Drive System gpm	29	29	INA	INA
Drive System Relief Pressure psi	5000	4000	INA	INA
Reservoir Capacity U.S. Gal.	20	8	INA	INA
HEADER DRIVE				
Drive System	Hyd. Pump/Motor	Hyd. Pump/Motor	Hyd. Pump/Motor	Hyd. Pump/Motor
Engagement Control	Hyd. Valve	Hyd. Valve	Hyd. Valve	Hyd. Valve
Header Reverser	Standard	Standard	Optional	Standard
HYDRAULIC TRANSMISSION				
Make	Sauer-Danfoss	Sauer-Danfoss	Sauer-Danfoss	Sauer-Danfoss
Number of Motor Speeds	2	2	2	2
System Relief Pressure psi	5,500	5,000	INA	INA
FINAL DRIVES				
Type	Planetary	Planetary	Planetary	Planetary
Ratio	41.6/1	32:1	INA	INA
GROUND SPEEDS				
Maximum Road mph	15	16	NA	16.5
Maximum Field mph	8.5	12	11	11
TIRES				
Drive Wheels	18.4 x 26	16.9 x 24	16.9 x 24 or 18.4 x 26	18.4 x 26
Tailwheels	14L x 16.1	31 x 13.5-15	31 x 13.5-15	31 x 13.5-15 or 14L x 16.1
DIMENSIONS				
Height to Top of Cab In.	132.3	122	132.8	132.8
Outside Width In.	146.7	144	INA	INA
Tread Width Tailwheels In.	84.4 - 120	90 - 120	90 - 120	90 - 120
Tread Width (Drive Tires) In.	127.5	125	127	127
Wheel Base In.	140	135	135	135
Ground Clearance In.	39.8	34	33.8	36.3
Overall Length W/Header In.	257.5	259	280	280
Weights (Less Header) Lb.	8,600	8,365	10,235	10,950

COMPETITIVE COMPARISONS
SP115B WINDROWER

POWER UNITS	CHALLENGER® SP115B	NH HW320 CASE IH WDX1101	NH HW305S CASE IH WDX1202S	NH HW325 CASE IH WDX1202
CAB				
Steering Wheel Tilt Positions	9	Infinite	Infinite	Infinite
Steering Column Tilt Positions	5	7	7	7
Instructional Seat	Yes	Yes	Optional	Yes
Header Lift Control	Electric	Electric	Electric	Electric
Header Tilt from Cab	Standard	Standard	Optional	Standard
Header Drive Control	Electric	Electric	Electric	Electric
Speed Range Control	Electric	Electric	Electric	Electric
Instrumentation	Electronic	Electronic	Electronic	Electronic
Engine/Transmission Protection	Light/Buzzer	Auto-Shut Down	Auto-Shut Down	Auto-Shut Down
Ground Speed Indicator	Yes	Yes	Yes	Yes
Windshield Wiper	Optional	Optional	Optional	Optional
Number of Cab Mirrors	3	3	3	3
Heater	Yes	Optional	Optional-Dealer Inst.	Yes
Tinted Glass ft²	73	INA	INA	73

NA - Not Available
INA - Information Not Available

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COMPETITIVE COMPARISONS
SP185B WINDROWER

POWER UNITS	CHALLENGER® SP185B	JOHN DEERE 4995	NH HW340 CASE IH WDX1701	NH HW345 CASE IH WDX1902
ENGINE				
Make	Cummins	John Deere	NH Genesis	NH Genesis
Displacement (Cu. In.)	359	417	456	456
Aspiration	Turbo	Turbo	Turbo	Turbo
Horsepower	185	182	166	186
Rated Speed (rpm)	2,500	INA	2,100	2,100
Cooling System (U.S. Qt.)	36	26	28	INA
Aspirated Air Pre-Cleaner	Yes	Yes	Yes	Yes
Air Intake Screen Cleaner	Standard	Standard	Standard	Standard
Number of Batteries	2	1	2	2
Alternator Rating (Amps)	95	120	85	135
Fuel-Tank Capacity (Gal.)	80	85	110	120
HYDRAULIC SYSTEM				
Drive System Relief Pressure	5500 (psi)	INA	4000 (psi)	INA (psi)
Reservoir Capacity (Gal.)	21	25	INA	INA
HEADER DRIVE				
Drive System	Hyd. Pump/Motor	Hyd. Pump/Motor	Hyd. Pump/Motor	Hyd. Pump/Motor
Engagement Control	Hyd. Valve	Hyd. Valve	Hyd. Valve	Hyd. Valve
Header Reverse	Standard	Standard	Standard	Standard
HYDRAULIC TRANSMISSION				
Make	Sauer-Danfoss	Eaton	Sauer-Danfoss	Sauer-Danfoss
Number of Motor Speeds	2	2	2	2
System Relief Pressure (psi)	5,500	5500	5,000	INA
FINAL DRIVES				
Type	Planetary	Planetary	Planetary	Planetary
Ratio	41.6:1	41.42:1	32:1	INA
GROUND SPEEDS				
Maximum Road (mph)	16	15	16	18
Maximum Field (mph)	12	8	12	12
TIRES				
Drive Wheels	23.1 x 26 turf 18.4 x 28 bar	18.4 x 26	16.9 x 24	18.4 x 26 turf, bar 23.1 x 26 turf 21L x 28 bar
Tail Wheels	14L x 16.1	12.5L x 16	31 x 13.5-15	14L x 16.1
DIMENSIONS				
Height to Top of Cab	133.4“	123”	122”	135.1”
Outside Width W / Widest Tire	155.5”	146”	144”	INA”
Tread Width Tail Wheels	84.4” - 120.0”	INA	90” - 120”	90” - 120”
Tread Width (Drive Tire)	131.9”	146”	125”	130.2”
Wheel Base	140”	139”	135”	137.2”
Frame/Rear Axle Ground Clearance	41.0”	35”	34”	36.3”
OVERALL LENGTH				
W / Header	255.9”	205”	259”	266”
Weight (Less Header) (Lbs.)	9430	9,221	9,415	12,300

COMPETITIVE COMPARISONS
SP185B WINDROWER

POWER UNITS (CONTD.)	CHALLENGER® SP185B	JOHN DEERE 4995	NH HW340 CASE IH WDX1701	NH HW345 CASE IH WDX1902
CAB				
Steering Wheel Tilt	Yes	Yes	Yes	Yes
Steering Column Tilt Positions	5	4	7	7
Heater	Yes	Yes	Optional	Optional
Header Lift Control	Electric	Electric	Electric	Electric
Header Tilt from Cab	Standard	Standard	Standard	Standard
Header Drive Control	Electric	Electric	Electric	Electric
Speed Range Control	Electric	Electric	Electric	Electric
Instrumentation	Electronic	Electronic	Electronic	Electronic
Engine/Transmission Protection	Electronic/Buzzer	Electronic/Buzzer	Auto-Shut Down	Auto-Shut Down
Ground Speed Indicator	Yes	Yes	Yes	Yes
Windshield Wiper	Optional	Yes	Optional	Yes
Number of Cab Mirrors	3	2	3	3
Tinted Glass (ft^2)	73	51.5	INA	73

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INA - Information Not Available

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COMPETITIVE COMPARISONS
AHB AUGER HEADER

AUGER HEADERS	CHALLENGER® AHB	JOHN DEERE 895	NH HS CASE IH HDX	MACDON 922
Sizes Available (Ft)	14, 16, 18	14, 16, 18	12, 14, 16, 18	14, 16, 18
Lift Range (In)	-3 to 26	INA	-4 to 27	-6 to 35
Header Drive	Hydraulic Motor	Hydraulic Motor	Hydraulic Motor	Mechanical
# Belts in Drive System	1	3	2	8
Flotation	Hydraulic	Hydraulic	Springs	Springs
On the Go Flotation Adjustment	Standard	Standard	Optional	NA
CUTTERBARS				
Number of Sickles	2	2	2	2
Sickle Drive	Half Swaybar	Enclosed Wobble	Open Wobble	Enclosed Wobble
Sickle Stroke (In)	3.0	3.0	3.0	3.0
Sickle Speed (SPM)	1840	1800	1900	1875 or 1450
Type of Sickles	Overserrated	Overserrated	Overserrated	Overserrated
Guard Angle Range (Degree)	5 to 12	INA	6 to 12	8 to 16
Number of Skid Shoes	2 or 3	4	12'-2 others 4	2
Skid Shoe Positions	5	4	5	5
Gauge Wheels	Optional	Optional	Optional	Optional
REELS				
Number of Bats	5 (6 opt)	5	5	5 (6 opt)
Type of Drive	Belt/Chain	Belt/Chain	Belt/Chain	Hyd Motor/Chain
Drive Protection	Belt	Belt	Belt	Relief Valve
Diameter	42"	42"	42"	42.5"
Speed Range (rpm)	65 to 75	65 to 74	51 to 82	30 to 75
AUGERS				
Number of Augers	2	2	1	1
Diameter (In)	9	Up 9, Low 11	20	24
Flighting Depth (In)	1.5	INA	5	6
Speed rpm	Upper 330 Lower 525	Upper 477 Lower 426	252	205
Type of Drive	Chain	Enclosed Chain	Chain	Belt/Gearbox
Drive Protection	Slip Clutches	None	Opt. Slip Clutch	None
Float Range (In)	Fixed	Fixed	1.75	Fixed
CONDITIONERS				
Type	Rubber on Steel Steel on Steel	Urethane Or Steel	NH - Rubber Case - Steel	Steel Rolls
Pressure System	Springs	Springs	Torsion Bar	Springs
Length (In)	110	100	102	63.5
Roll Speed (rpm)	920	689	701	850
Roll Diameter (upper) (In)	8 or 7.75	10	10.4	8.7
Roll Diameter (lower) (In)	7.75	10	10.4	8.7
Type of Drive	Gearbox/U-joints	Gear/Shaft	Gearbox/Shaft	Belt/Gearbox
Discharge Range (In)	40 – 96	40 - 100	38 – 96	90 W/Opt Fins
WEIGHTS				
14' Header & Conditioner (Lb)	3850	4223	3680	3649
16' Header & Conditioner (Lb)	4100	4512	4035	3942
18' Header & Conditioner (Lb)	4400	4892	4430	4241

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INA - Information Not Available

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COMPETITIVE COMPARISONS
DHW DRAPER HEADER

SHIFTABLE DRAPER HEADERS	CHALLENGER® DHW	MACDON 972	HONEYBEE GRAIN BELT
Sizes Available	22', 25', 30'	21', 25', 30'	21', 25', 30'
Lift Range		-2.5" to 42"	INA
Header Drive	Hydraulic Motor	Mechanical	Hydraulic
Flotation	Hydraulic	Springs	Springs
On the Go Flotation Adjustment	Standard	NA	NA
CUTTERBARS			
Number of Sickles	1	2	1, 2 Opt
Sickle Drive	SCH Epicylic	Enclosed Wobble	SCH Epicylic
Sickle Stroke	3.13"	3"	3.34"
Sickle Speed (SPM)	1300	1310 or 1695	1300
Type of Sickles	Over-serrated	Over-serrated	Over and under
Guard Angle Range (Degree)	7 to 14	INA	INA
Number of Skid Shoes	2-Optional	2-Optional	2-Standard
Gauge Wheels	Optional	Optional	Optional
REELS			
Number of Bats	5 or 6	5 or 6	5 or 6
Type of Drive	Hyd. Motor	Hyd Motor/Chain	Hyd Motor
Diameter	52"	52"	54"
Speed Range (rpm)	0-60	NA	NA
DRAPER			
Delivery Opening Width	42" to 70"	36" to 64.5"	INA
WEIGHTS			
21' Header & PU Reel (Lb)	22' – 2850	3240	2042
25' Header & PU Reel (Lb)	3200	3640	2342
30' Header & PU Reel (Lb)	3800	4330	2772

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INA - Information Not Available

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COMPETITIVE COMPARISONS
DKHB DISC HEADER

DISC HEADER	CHALLENGER® DKHB	JOHN DEERE 994, 995	NH 2355 CASE IH RDX161
Cutting Width	12' and 15' 3"	13', 14' 6", 16'	15' 5"
Lift Range In	-3 to 25	INA	-4 to 27
Header Drive	Hydraulic Motor	Hydraulic Motor	Hydraulic Motor
Flotation	Hydraulic	Hydraulic	Springs
On the Go Flotation Adjustment	Standard	Standard	Optional
CUTTERBED			
Number of Discs	8, 10	8, 9, 10	12
Oil Reservoir Capacity	2.5, 3.25 qt	10, 11, 12 qt	10 oz / disc
Header Tilt Angle (Degrees)	0 to 10	0 to 8	INA
Gauge Wheels	Optional	Optional	Optional
CONDITIONERS			
Type	Engaged Rolls	Intermeshed or Impeller	Intermeshed
Material	Steel on Steel	2 Urethane or 2 Steel	NH - 2 Rubber Case – 2 Steel
Pressure System	Springs	Springs	Torsion Bar
Length (In)	110	106	102
Roll Speed (rpm)	1100, 1280	664, 865	640
Roll Diameter (upper) In	7.75	10	10.4
Roll Diameter (lower) In	7.75	10	10.4
Roll separation	Automatic Eccentric Cam	Rolls Open when Header Raised	Automatic Torsion Bar
Type of Drive	Gearbox/U-joints	Gear/Shaft	Gearbox/Shaft
Discharge Range In	40 – 96	36 - 85	38 – 96
DIMENSIONS			
Overall Width (In)	150, 186	157, 175, 195	190
Weight (Lb)	3490, 4,280	3665, 4000, 5155	4,100

NA - Not Available
INA - Information Not Available

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Challenger® features to sell compared to the New Holland HW300 and HW320 or Case IH WDX901 and WDX1101

Tractor

- Hydraulic header flotation, for longer header life and ease of operator adjustment, as compared to spring flotation.
- Caterpillar engine, noted for economy, reliability, long life and excellent service network.
- Easy serviceability of tractor, evidenced by tilting engine cover, as compared to only flip up side shields.
- Large drive and tail wheel tires, for superior ride at all field speeds.
- Natural front to rear engine airflow, for more efficient engine cooling.
- Engine air intake sits up forward and high, away from most chaff.

Cab

- Modern wide cab, with curved front glass for excellent visibility.
- Control layout all at eye level, for less operator fatigue.
- Cab heater is standard, for more comfortable operator climate in spring, fall, and at night.

Challenger® features to sell compared to the John Deere 4895

Tractor

- Caterpillar engine noted for economy, reliability, long life, and excellent service network.
- Easy serviceability of tractor, evidenced by tilting engine cover, as compared to only flip up side shields.
- Natural front to rear engine airflow, for more efficient engine cooling.
- Engine air intake sits up forward and high, away from most chaff.

Cab

- Cab easier to access, with instructional seat that folds when not in use. Operator's seat centered for best operator location.
- Control layout all at eye level, for less operator fatigue.

COMPETITIVE COMPARISONS
SP85B-SP115B WINDROWERS

Challenger® features to sell compared to the MacDon 9250, 9350, and 9352i

Tractor

- Hydraulic header flotation, for longer header life and ease of operator adjustment, as compared to spring flotation.
- Hydraulic header drive, for easier header installation and smoother header operation, as compared to shaft drive.
- Large drive tires, for superior ride at all field speeds.
- Natural front to rear engine airflow, for more efficient engine cooling.
- Engine air intake sits up forward and high, away from most chaff.

Cab

- Modern wide cab, with curved front glass for excellent visibility.
- Control layout all at eye level, for less operator fatigue.
- Header reverse is standard to help increase productivity.

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Challenger Sales Engineering, August, 2004

Challenger® features to sell compared to the New Holland HS Auger Header (Case IH HDX)

Cutterbar

- Cutterbar maintenance is significantly reduced by the use of full width sickle hold down.
- Half swaybar sickle drive is simple and built for long life.

Reel

- All reel tine tubes pivot on sealed ball bearings for longer life.

Augers

- Dual augers deliver crop to conditioner rolls smoother and with less abrasion than single floating auger, for higher quality windrows.

Hay Conditioner

- Fully engaged rubber-on-steel or steel-on-steel rolls for fast crop dry-down and minimal leaf loss.
- Steel-on-steel conditioner roll option for long life and reduced maintenance costs (compared to New Holland)
- High conditioner roll speed improves windrow formation and machine productivity.

Mainframe

- Hydraulic header flotation as compared to spring flotation, for longer header life and ease of operator adjustment.

Challenger® features to sell compared to the John Deere 895 Auger Header

Cutterbar

- Cutterbar maintenance is significantly reduced by the use of full width sickle hold down.
- Half swaybar sickle drive is simple and built for long life.

Reel

- Reel tine tubes pivot on sealed ball bearings for longer life.
- Reel tine tubes are segmented to make replacing reel tines easier.

Augers

- Dual augers are each protected with a slip clutch.
- Auger pans are removable to help reduce dirt buildup and allow rocks to fall out before they reach the rolls.
- Augers have center support for longer life.

Hay Conditioner

- Fully engaged rubber on steel or steel on steel rolls for fast crop dry-down and minimal leaf loss.
- High conditioner roll speed improves windrow formation and machine productivity.

Challenger® features to sell compared to the MacDon 922 Auger Header

Cutterbar

- Cutterbar maintenance is significantly reduced by the use of full width sickle hold down.
- Half swaybar sickle drive is simple and built for long life.

Augers

- Dual augers deliver crop to conditioner rolls smoother and with less abrasion than a single auger, for higher quality windrows.

Hay Conditioner

- Wide 110” conditioner rolls for improved crop conditioning.
- Fully engaged rubber-on-steel or steel-on-steel rolls for fast crop dry-down and minimal leaf loss.
- High conditioner roll speed improves windrow formation and machine productivity.

Mainframe

- Hydraulic header flotation as compared to spring flotation, for longer header life and ease of operator adjustment.

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Challenger Sales Engineering, August, 2004

COMPETITIVE COMPARISONS
SP185B WINDROWER / DKHB HEADER

Challenger® features to sell compared to the New Holland HW340 and 2355 Disc Header (or Case IH WDX1701 and RDX161 Disc Header)

Header

- Gear-to-gear cutterbed, as compared to modular cutterbed. Less maintenance. One fill and one drain plug instead of 12 drain plugs and 12 fill plugs.
- All gears are shaved, and bearings are sealed, for less contamination and longer life.
- Low profile cutterbed cuts lower with less crop scalloping.
- Cage conveyors and turbulence reduction roll. Higher productivity and smoother windrows than a floating auger.
- Cutterbed efficiency. Crop lifters are not needed across entire cutterbed, conserving horsepower.
- Fully engaged steel rolls for fast crop dry-down and minimal leaf loss. Steel rolls also have a longer useful life than rubber rolls.

Tractor

- Hydraulic header flotation, for longer header life and ease of operator adjustment.
- Cummins QSB engine, noted for economy, reliability, and long life.
- Easy serviceability of tractor, evidenced by tilting engine cover, as compared to only flip up side shields.
- Large drive and tail wheel tires, for superior ride at all field speeds.
- Natural front to rear engine airflow, for more efficient engine cooling.
- Engine air intake sits up forward and high, away from most chaff.

Cab

- Modern wide cab, with curved front glass for excellent visibility.
- Control layout all at eye level, for less operator fatigue.
- Field performance data incorporated into monitor, to assist operator in measuring productivity.
- Monitor allows ground speed, flotation pressure, and one of eight other functions to be continuously monitored.
- Cab heater is standard, for more comfortable operator climate in spring, fall, and at night.

COMPETITIVE COMPARISONS
SP185B WINDROWER / DKHB HEADER

Challenger® features to sell compared to the John Deere 4995 and 994 and 995 Disc Header

Header

- All gears accessible from the top of the cutterbed. Maintenance is easier, all gears are shaved, and bearings are sealed.
- Cage conveyors and turbulence reduction roll. Higher productivity and smoother windrows in both tall and short crops.
- Cutterbed efficiency. Lower horsepower requirement to achieve best productivity.
- High conditioner roll speed improves windrow formation and machine productivity.
- Header's driven at each end to reduce cutterbed torque loads, and prolong bed life.

Tractor

- Cummins QSB engine, noted for economy, reliability, and long life.
- Easy serviceability of tractor, evidenced by tilting engine cover, as compared to only flip up side shields.
- Large drive and tail wheel tires, for superior ride at all field speeds.
- Natural front to rear engine airflow, for more efficient engine cooling.
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- Cab easier to access, with instructional seat that folds when not in use. Operator's seat centered for best operator location.
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